# Environmental Assessment in Canada

## Directory of University Teaching and Research 1982-1983

Editor: Bruce Rigby

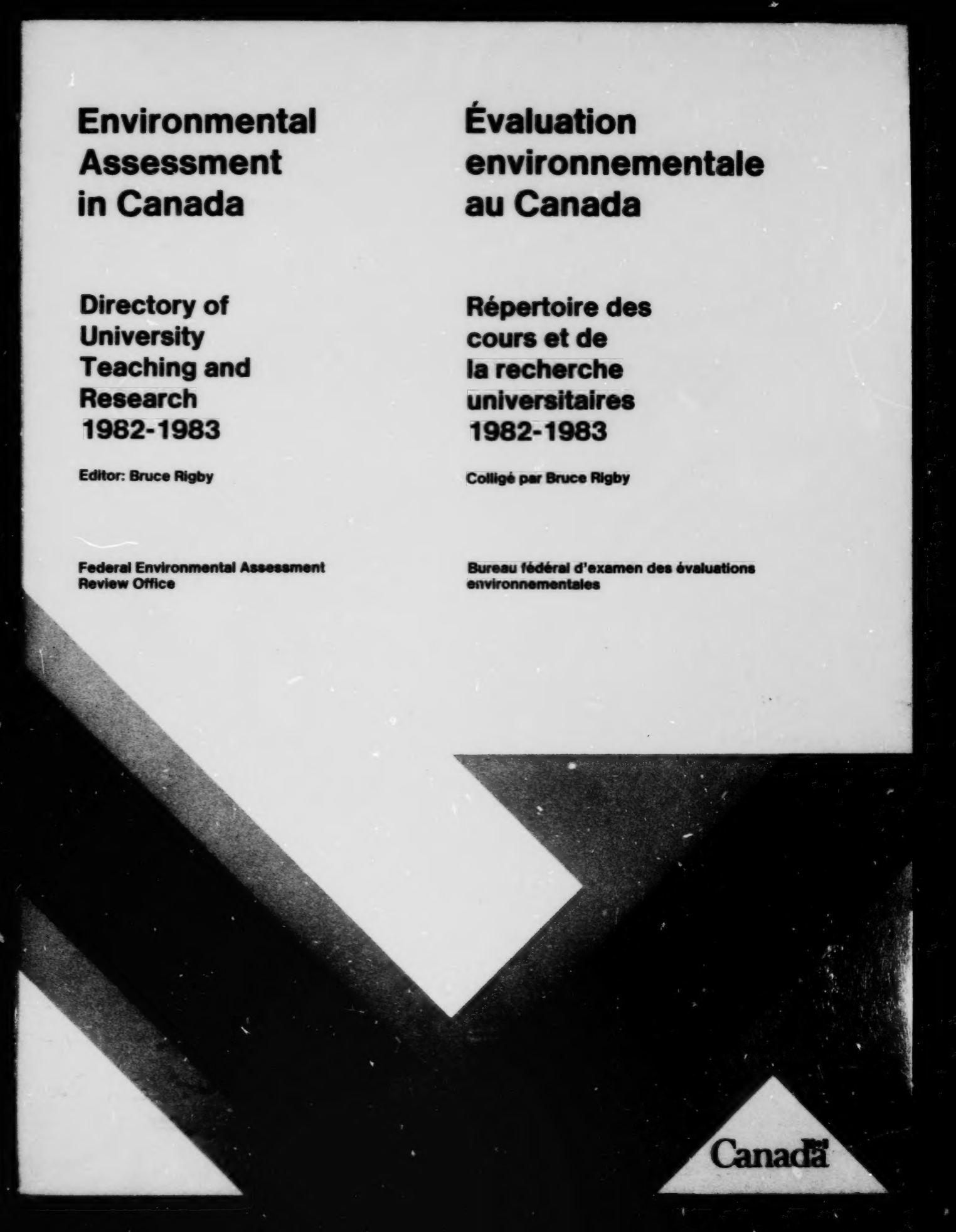
Federal Environmental Assessment Review Office

# Évaluation environnementale au Canada

## Répertoire des cours et de la recherche universitaires 1982-1983

Colligé par Bruce Rigby

Bureau fédéral d'examen des évaluations environnementales



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# INTRODUCTION

Environmental Impact Assessment (EIA) has gained a wide acceptance from decision-makers at the federal and provincial levels, and from the public, since its introduction into Canada in the early 1970s. The Canadian academic community has also shown a keen interest in its application and development. A major reason underlying this interest is that, in environmental impact assessment, unrelated disciplines frequently interact in the examination of a common problem. Not only is each discipline enriched through new applications of its techniques, but the interaction between disciplines promotes synergistic development.

Originally, environmental impact assessment dealt primarily with the bio-physical and engineering aspects of resource development projects. More recently it has also come to include an examination of the social and economic effects.

Research into various aspects of environmental and social impact assessment takes many forms and approaches, reflecting the great diversity of interests involved. The results of this research are constantly being incorporated into EIA in an attempt to improve the quality of decisions being made.

The Federal Environmental Assessment Review Office (FEARO) has undertaken a program to gather and distribute information about evolving Canadian practice in the academic community in an endeavor to stay abreast of developments and to help advance present practices.

This, therefore, is the first in an annual series of bulletins on research and practice, designed to point out which universities and colleges are active in EIA and SIA (Social Impact Assessment). It highlights sections of those institutions that are engaged in teaching work and their areas of concentration or main interest, and to provide a current bibliography on EIA/SIA from universities.

In compiling this publication, information was obtained from interviews conducted at universities, by telephone, and from a questionnaire. Once the information was received and organized, it was returned to the contacts to be checked for accuracy and omissions. In total, approximately 400 persons were contacted across the country.

It is hoped that in future editions of this publication, information on research activities can be expanded to give the reader a more complete overview of the types of research projects undertaken. FEARO wishes to thank all those who participated in the project by giving of their time for interviews and for correspondence.

# INTRODUCTION

Depuis son apparition au Canada au début des années 70, l'évaluation des incidences environnementales (EIE) a été très favorablement accueillie par les preneurs de décision sur le plan tant fédéral que provincial ainsi que par le grand public. Les universitaires canadiens ont aussi manifesté un vif intérêt pour son application et son intensification. L'une des raisons principales de cet intérêt est due au fait que, dans ce domaine, il arrive fréquemment que l'on fasse appel à des disciplines non apparentées pour étudier un problème commun. En conséquence, chaque discipline se trouve enrichie grâce aux nouvelles applications de ses techniques; en outre, l'interaction des disciplines favorise les réalisations interdisciplinaires.

Au tout début, l'évaluation des incidences environnementales portait principalement sur les aspects biophysiques et techniques des projets d'exploitation des ressources. Depuis quelque temps, elle comprend aussi l'examen des effets socio-économiques de ces projets.

Les travaux de recherche concernant divers aspects de l'évaluation des incidences environnementales et sociales comportent un grand nombre de manières de procéder et de façons d'envisager les questions, ce qui témoigne de la grande diversité des intérêts. Les résultats de ces travaux sont constamment intégrés à l'EIE pour améliorer la qualité des décisions prises.

Le Bureau fédéral d'examen des évaluations environnementales (BFEEE) a entrepris de recueillir et de diffuser des renseignements sur les méthodes employées par le milieu universitaire canadien, afin de se tenir au courant des faits nouveaux et d'aider à améliorer les méthodes employées.

La présente publication est la première d'une série annuelle dont le but est d'indiquer quels sont les collèges et les universités qui ont des activités dans le domaine de l'évaluation des incidences environnementales et sociales; on y met en évidence les sections de ces institutions où il se fait de l'enseignement et les domaines de spécialisation ou d'intérêt principal, et on y donne une liste des documents qui traitent de la question et que l'on peut actuellement obtenir dans les universités.

Les renseignements présentés proviennent d'entrevues faites sur place dans les universités, d'entrevues effectuées par téléphone et des réponses à un questionnaire envoyé par la poste. Une fois les renseignements reçus et classés, on a retourné aux personnes interrogées des sections de l'ouvrage pour qu'elles en vérifient l'exactitude et qu'elles signalent les oublis. En tout, on a communiqué avec environ 400 personnes au Canada.

Pour les prochaines publications du présent ouvrage, nous espérons présenter plus de renseignements concernant les activités de recherche pour offrir aux lecteurs un aperçu plus complet des types de projets de recherche entrepris. Nous remercions toutes les personnes qui ont participé en nous fournissant des renseignements par écrit et en nous accordant des entrevues.

# EDITOR'S NOTE

This publication has been organized by university, alphabetically. Each university's section has been sub-divided into three parts.

**TEACHING:**

| | | |
|---|---|---|
| Course No. | Course Level<br>Indicated by year<br>number or G for<br>graduate | Course Title<br>Description<br>Instructor |

**RESEARCH:**

| | |
|---|---|
| Name of Researcher | Department/School<br>Description of research activities |

**PROGRAM ACTIVITIES:**

A. Program areas in which EIA/SIA activities are undertaken.

B. Whether or not the university offers a core program or streaming in EIA/SiA.

C. Activities Related to EIA/SIA that occur on campus.

The information in this publication is in the form it was received, as much as possible. Courses deal either specifically with EIA or SIA, or treat the theory, methodology, and application of EIA/SIA as a normal part of course content. Courses which deal with baseline data collection or other ancillary aspects of EIA/SIA have been omitted. For research underway or the publications which are available from Canadian universities, the policy was to let respondents' judgment prevail, as many of the entries could provide a basis for activities related to EIA/SIA.

The current bibliography includes student papers that have been identified as being potentially valuable, and are presented by year and author.

The style follows standard academic practice in presenting the university's entries and bibliographic material, that is, it is in the language in which it was received. For those sections that are a result of editorial interpretation or that have been generated by the editor, the information is presented in both official languages as required by federal policy.

# NOTE DE LA RÉDACTION

La présente publication contient une liste des universités par ordre alphabétique anglais. La section qui concerne chaque université a été subdivisée en trois parties:

**ENSEIGNEMENT:**

N° du cours Niveau Titre
Description
Chargé de cours

**RECHERCHE:**

Nom du projet Département
Description

**ACTIVITÉS:**

A. Programmes dans lesquels on effectue des travaux d'évaluation des impacts environnementaux ou sociaux.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine.

C. Activités se rapportant à l'évaluation des incidences environnementales et sociales (EIES).

Les renseignements ont été présentés, autant que possible, tels qu'ils ont été reçus. Les cours mentionnés portent directement sur l'EIES ou traitent de la théorie, des méthodes et de l'application de l'EIES qui font normalement partie du contenu du cours. Les cours sur la collecte des données de base ou sur d'autres aspects de l'EIES ont été omis. En ce qui a trait aux travaux de recherche en cours ou aux publications que l'on peut obtenir des universités canadiennes, nous avons laissé aux personnes interrogées le choix de les mentionner ou non, car un grand nombre de sujets traités pourraient servir de base à des activités se rapportant à l'EIES.

La liste des documents actuels a été dressée par année et par auteur; elle comprend des documents rédigés par des étudiants et qui nous paraissent présenter un certain intérêt.

En ce qui concerne la langue utilisée, les renseignements et la bibliographie fournis par les universités ont été présentés tels que reçus, conformément à la coutume universitaire. Dans les sections qui résultent d'une interprétation de la rédaction ou que cette dernière a préparées, les renseignements sont présentés dans les deux langues officielles, conformément à la politique fédérale.

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Cat. No. En 104-5/1983

ISBN 0-662-52541-8

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N° de cat. En 104-5/1983

ISBN 0-662-52541-8

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# ACADIA UNIVERSITY

Location/Endroit: Wolfville, Nova Scotia

Mailing Address/ Adresse: Acadia University
Wolfville, Nova Scotia
B0P 1X0

## TEACHING:

*Department of Biology*

4413 (4) WILDLIFE MANAGEMENT

4423 The environmental assessment process is covered in these courses. U.S. and Canadian background and federal involvement including legislation. General processes and legislation in provinces. Examples and case studies, the class is involved in drafting a proposal based on a proposed development. Instructor: D. Dodds.

## RESEARCH:

Dodds, D. BIOLOGY

Review of Salmon River Hydro Project EIS; impact assessment in recreational development; review of impacts potentially owing to hydroelectric development.

## PROGRAM ACTIVITIES:

A. *Department of Biology*

EIA is not a major area of teaching or research in the department. However, certain faculty members have been involved in the past, though are currently involved only indirectly.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

## ACTIVITÉS:

A. *Département de Biologie*

L'EIE n'est pas un domaine d'enseignement ou de recherche important de ce département. Toutefois, certains professeurs ont déjà travaillé dans ce domaine; actuellement, ils n'y travaillent qu'indirectement.

B. Y a-t-il un programme portant spécialement sur l'évaluation d'incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune mentionnée.

# UNIVERSITY OF ALBERTA

Location/Endroit: Edmonton, Alberta

Mailing Address/
Adresse: The University of Alberta
Edmonton, Alberta
T6G 2E5

**TEACHING:**

*Department of Economics*

INT D 369 (3) ECONOMICS OF THE ENVIRONMENT

Economic growth and deterioration of the environment; types and causes of environmental deterioration; theory, policy, and measurement relating to environmental deterioration; recreation economics; and current Canadian environmental topics.

*Faculty of Forestry*

FOR 301 (3) SPRING CAMP

A five-week field camp designed to introduce students to the broader aspects of forest land resource assessment, evaluation and management, including assessment of impacts of various forms of resource development. Instructor: H.G. Pratley.

FOR 503 (G) VEGETATIVE RECLAMATION OF DISTURBED FOREST LAND

This course emphasizes environmental impact assessment of proposed resource developments, particularly related to coal and petroleum. Reclamation techniques from a vegetation standpoint are described in detail. Instructor: D.G. Walker.

*Department of Mineral Engineering*

MNL 508 (G) MINE ENVIRONMENTAL PLANNING

Mine planning, development and exploitation of mineral deposits as influenced by (1) disposal of waste rock (2) engineering and design of tailings (3) reclamation and drainage and pollution control case studies.

**RESEARCH:**

Fuller, W.A. ZOOLOGY

Member, Slave River Project environmental assessment panel.

**PROGRAM ACTIVITIES:**

A. 1) *Boreal Institute for Northern Studies*

A research body functioning within the Faculty of Intradisciplinary Studies; acts as co-ordinator of campus interests in northern research.

2) *Faculty of Agriculture and Forestry*

Professionally oriented environmental program; environmental assessment is approached as it related to the forest environment.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities related to EIA/SIA: None indicated.

**ACTIVITÉS:**

A. 1) *Boreal Institute for Northern Studies*

Institut de recherche qui fait partie de la faculté des Études intradisciplinaires et qui coordonne les activités de l'université en matière de recherches sur le Nord.

2) *Faculty of Agriculture and Forestry*

Programme sur l'environnement débouchant sur une profession; l'évaluation des incidences environnementales est abordée du point de vue de l'environnement forestier.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités spéciales se rapportant à l'EIES: Aucune.

# BRANDON UNIVERSITY

Location/Endroit: Brandon, Manitoba

Mailing Address/ Adresse: Brandon University
Brandon, Manitoba
R7A 6A9

## TEACHING:

*Department of Geography*

38.294 (2) RECREATIONAL RESOURCES AND PLANNING

Modern man devotes considerable time and expense to pursuit of recreational activities. This course deals with the spatial interrelationships between the user public and the resource base required for recreation. Units include passive recreation, active recreation, supply and demand, resource base evaluation, government policies and planning and projecting future trends. This course is not concerned with urban-based recreation or organized sports. Instructor: A. Gill, R.C. Rounds.

38.392 (3) RENEWABLE RESOURCE MANAGEMENT

A study of man-land relationships with emphasis on theory of resource management. A multi-factorial approach is used to establish a framework for analyzing resource exploitation. Emphasis is placed on renewable resources with concentration on public resources. Conflicting ideologies and comparative resource programmes are examined. Instructor: R.C. Rounds.

38.393 (3) LAND USE PLANNING

An examination of the history and problems of land use. A study of the principles and practices of regional planning. The fundamentals involved in any approach to planning will be illustrated by means of a Canadian case study relating to economics, resource development, watershed conservation, changing land use, and characteristics of site and situation. Instructor: R.C. Rounds.

38.479 (4) ENVIRONMENTAL PERCEPTION AND BEHAVIOR

It is becoming increasingly clear that to understand environmental decision-making, knowledge of peoples' environmental perceptions and behavior is essential. This is because decisions to modify or change the environment are based not so much on the environment as it is but rather on the environment as it is perceived by the decision-makers. This course looks at the theory and practice of the geographical aspects of this interdisciplinary field of study. Instructor: J.C. Everitt.

## RESEARCH:

Rounds, R.C. GEOGRAPHY

Ecological basis for environmental assessment; carrying capacity; biophysical impact.

## PROGRAM ACTIVITIES:

A. A major in Environmental Science is offered which allows interested students an opportunity to pursue a wide range of studies related to the physical and human environment.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities related to EIA/SIA: None indicated.

## ACTIVITÉS:

A. L'Université de Brandon offre aux étudiants intéressés une spécialité en sciences de l'environnement qui leur permettra de poursuivre toute une gamme d'études se rapportant à l'environnement physique et humain.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

# UNIVERSITY OF BRITISH COLUMBIA


Location/Endroit: Vancouver, British Columbia

Mailing Address/ Adresse: The University of British Columbia
2075 Wesbrook Mall
Vancouver, British Columbia
V6T 1N5


**TEACHING:**

*School of Community and Regional Planning*

PLAN 504 (G) ECOLOGY OF URBAN REGIONS

This course provides a bio-ecological perspective on urban systems and particularly their impacts on the natural environment. The purpose is to develop a general framework for the application of basic ecological theory and principles to environmental management and planning, including such techniques as impact assessment.

PLAN 505 (G) SOCIAL PLANNING POLICY

The historical context and present issues in social policy in Canada. The purpose of the course is to provide an understanding of the economic and ideological basis for Canadian social policy and to investigate current planning issues related to social policy.

PLAN 514 (G) ENVIRONMENTAL IMPACT ASSESSMENT

Current issues, approaches and techniques pertaining to environmental impact assessment in general, and social impact assessment in particular.

GEOG 315 (3) ENVIRONMENTAL INVENTORY AND CLASSIFICATION

Classification and inventory of those biophysical elements which influence people's use of air, land and water.

GEOG 366 (3) ENVIRONMENT AND RESOURCES

Concepts of environment and resources; the role of physical geography in understanding the interaction of Man and the environment; introduction to the management of environment-resource systems.

*Department of Geography*

GEOG 415 (4) ENVIRONMENTAL QUALITY AND IMPACT ASSESSMENT

Environmental quality from the standpoints of human perception, government standards, methods of measurement, impact assessment and strategies for the enhancement of quality. Case studies are drawn primarily from North America. Instructor: O. Slaymaker.

GEOG 417 PHYSICAL ENVIRONMENT OF THE CITY

The impact of urbanization upon the natural environment and vice versa. Aspects of urban climate, soils, hydrology, physiography, vegetation and wildlife. Urban metabolism, pollution, waste management and natural hazards.

GEOG 418 (4) ENVIRONMENTAL CHANGE

Changes in the physical environment in terms of long term (e.g. climatic change), intermittent (e.g. landslides and avalanches) and sequential (e.g. plant successions) environmental changes. Emphasis on the role of and impacts on people.

GEOG 466 (4) GEOGRAPHY AND RESOURCE MANAGEMENT

Geographical analysis of complex man-environment systems. Illustration of the roles of physical processes, institutional framework and technology in the interaction of Man and environment at several scales.

*Faculty of Law*

LAW 472 (4) ENVIRONMENTAL LAW

Study of the effectiveness of private law remedies. In addition, various alternative administrative schemes for controlling environmental degradation will be investigated. Particular emphasis will be placed on legal aspects of air and water pollution control.

**RESEARCH:**

| | |
|---|---|
| Boothroyd, P. | SCHOOL OF COMMUNITY AND REGIONAL PLANNING<br><br>Ongoing research on EIA/SIA process in West and North, and on substantive impacts of industrial development on remote communities. |
| Carley, M. | SCHOOL OF COMMUNITY AND REGIONAL PLANNING<br><br>A social impact monitoring framework for Beaufort Sea development (PhD research). |
| Dembicki, A. | SCHOOL OF COMMUNITY AND REGIONAL PLANNING<br><br>Monitoring implementation of the Norman Wells Pipeline Project (M.A. research). |
| Dorcey, A. | WESTWATER RESEARCH CENTRE<br><br>Research on the management of coastal resources; an analytical framework for planning in the management of fishery-mariculture resources on the coast of British Columbia; reform of the governing of Canada's pacific coast resources. |
| Golding, D.L. | FORESTRY<br><br>Environmental impact of forest harvesting on water resources for B.C. Ministry of Forests. |
| Golob, D. | WESTWATER RESEARCH CENTRE<br><br>Interest involvement in the planning process through an examination of the Fraser River Estuary Study (M.A. research). |
| McKee, G. | SCHCOL OF COMMUNITY AND REGIONAL PLANNING<br><br>The role of EARP in decision-making for the Alaska Highway Gas Pipeline (M.A. research). |
| Olynyk, J. | SCHOOL OF COMMUNITY AND REGIONAL PLANNING<br><br>The effects of EIA procedures on project planning by the private sector (M.A. research). |
| Rees, W.E. | SCHOOL OF COMMUNITY AND REGIONAL PLANNING<br><br>Ongoing research on aspects of EIA/SIA as applied at the federal level in the Beaufort Sea and at the provincial level (B.C. Northeast Coal Development). |

**PROGRAM ACTIVITIES:**

A. 1) *Faculty of Forestry*

EIA dealt with only as it applies to forest management.

2) *The Centre for Continuing Education*

Offers a directed independent studies course entitled Environmental Assessment in Regional Planning. The course text is a three volume manual prepared and edited by W.E. Rees.

3) *Westwater Research Centre*

A interdisciplinary research centre with a program of research on the design of policies and institutions for managing coastal resources. The research is supported by government agencies, foundations and industry. Many of the component studies consider the procedures and methods of E1A and SIA.

4) *School of Community and Regional Planning*

A graduate school which as part of its program allows students the opportunity to examine questions relating to EIA and SIA. Most research activity relating to EIA/SIA can be found being undertaken by members of this school and "Westwater".

B. EIA/SIA Core Program or Streaming?:

No, however respondents indicated that, at an undergraduate level, those students interested in EIA/SIA are encouraged to take courses which will give them the tools to work at the graduate level. Courses relate to subjects such as the quality of information collected, methodologies, and so on. At the graduate level, students may follow a program making use of the facilities of study and research provided by the School of Community and Regional Planning and the Westwater Research Centre.

C. Activities Related to EIA/SIA:

Seminars, workshops and conferences arranged by Westwater. The most recent was a workshop in Australia co-sponsored by Westwater and the University of Melbourne. The publication *Environmental Assessment in Australia and Canada* is a result of this workshop.

**ACTIVITÉS:**

A. 1) *Faculty of Forestry*

On y étudie l'EIE uniquement en rapport avec l'aménagement forestier.

2) *The Centre for Continuing Education*

Offre un programme d'études indépendant et dirigé intitulé Évaluation environnementale et planification régionale. La matière du cours est contenue dans un manuel en trois volumes préparé par W.E. Rees.

3) *WESTWATER Research Centre*

Centre de recherche interdisciplinaire qui possède un programme de recherche sur la création de politiques et d'institutions visant la gestion des ressources riveraines. La recherche est subventionnée par des organismes gouvernementaux, des fondations et l'industrie. Beaucoup d'études portent sur les procédures et les méthodes d'EIES.

4) *School of Community and Regional Planning*

École pour étudiants diplômés qui, dans le cadre de son programme, permet aux étudiants de se familiariser avec des sujets qui se rapportent à l'EIES. La plupart des activités de recherche dans ce domaine sont entreprises dans cette école et au centre Westwater.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?:

Ni l'un ni l'autre. Toutefois, on encourage les étudiants non diplômés qui s'intéressent à l'EIES à suivre des cours qui leur serviront lorsqu'ils entreprendront des études supérieures. Les sujets traités dans ces cours sont la qualité des renseignements recueillis, les méthodes, etc. Une fois diplômés, les étudiants peuvent entreprendre un programme d'études et de recherches à l'école de planification communautaire et régionale (School of Community and Regional Planning) ainsi qu'au centre de recherche Westwater (Westwater Research Center).

C. Activités se rapportant à l'EIES:

Le Centre Westwater organise des séminaires, des ateliers et des conférences. La plus récente activité a été un atelier tenu en Australie et parrainé conjointement par le Westwater Research Center et l'université de Melbourne, qui a été suivi de la parution d'un document intitulé *Environmental Assessment in Australia and Canada*.

# BROCK UNIVERSITY

Location/Endroit: St. Catharines, Ontario

Mailing Address/ Adresse:
Brock University
Merrittville Highway
St. Catharines, Ontario
L2S 3A1

## TEACHING:

*Institute of Urban and Environmental Studies*

353 (3) ENVIRONMENTAL IMPACT ASSESSMENT

The development of EIA in Canada and other countries; methods of EI analysis, the EIS, a review of Canadian government procedures and examples of assessments on northern pipelines, hydroelectric and nuclear power stations. Instructor: F. Berkes.

## RESEARCH:

Berkes, F. INSTITUTE OF URBAN AND ENVIRONMENTAL STUDIES

Technical advisor/consultant to joint government-native peoples organizations on the impacts of James Bay area developments on fisheries.

## PROGRAM ACTIVITIES:

A. Research undertaken by members of the Institute of Urban and Regional Studies.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

## ACTIVITÉS:

A. Travaux de recherche entrepris à l'institut des études urbaines et régionales (Institute of Urban and Regional Studies).

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

# THE UNIVERSITY OF CALGARY


Location/Endroit: Calgary, Alberta

Mailing Address/ Adresse: The University of Calgary
2500 University Drive, N.W.
Calgary, Alberta
T2N 1N4


**TEACHING:**

*Department of Psychology*

503.26 (4) ENVIRONMENTAL PSYCHOLOGY

This course introduces the student to psychological research, principles, and theories which relate to the influence of both the built and the natural environment on human behavior. Content includes evaluating environmental influences, theories of environment-behavior relationships, personal space and territoriality and the perception of the environment. Instructor: R. Dewar, B. Dunn.

*Department of Sociology*

SOC 451 (4) SOCIOLOGY OF NATURAL RESOURCE DEVELOPMENT

The social impact of resource development on communities, groups and institutions will be examined. The interaction of government, industry and local citizen involvement will be examined including social policy in resource development. Instructor: J. DiSanto.

*Faculty of Environmental Design*

EVDS 649 (G) ENVIRONMENTAL IMPACT ASSESSMENT

The course is designed to provide students with an introduction to socio-economic and biophysical impact analysis and assessment methods, techniques, approaches and processes. The course will be structured around a case study. The class will critique a recent EIA. Instructor: D. Thompson.

EVDS 747 (G) ENVIRONMENTAL MANAGEMENT

The methods used by government and industry to integrate environmental and social factors into their day to day operations and planning are in constant evolution. There is an increasing realization that the management strategy employed is more significant than the detailed issues of specific environmental/social problems. The knowledge about and use of management skills are essential for successful environmental science practitioners. Instructor: D. Thompson.

EVDS 725 (G) TOPICS IN WILDLIFE MANAGEMENT AND RESOURCE DEVELOPMENT

The general aim of the course is to provide the student with an adequate background to begin work on how to reach a sensible compromise between industrial and wildlife interests. Instructor: V.Geist.

*Department of Anthropology*

ANT 538 (G) ECONOMIC DEVELOPMENT

Focuses upon the impact of large scale developments in both urban and rural areas. Comparative data from other cultures will also be presented.

*Canadian Studies Program*

CAN ST 309 (3) DEVELOPMENT OF THE CANADIAN NORTH

The material presented will provide an historical analysis of the development and growth of the North. Contemporary issues concerning development and the impact of this development will be analyzed.

*Department of Biology*

BIO 421 (4) MANAGEMENT OF THE BIOSPHERE

The course is an examination of the role of the human population in the biosphere and of the consequences of interactions between our species and the planetary ecosystem. An interdisciplinary look at resources highlighting the use of EIA.

*Department of Geography*

GEOG 321 (3) ENVIRONMENTAL PROBLEMS AND RESOURCE MANAGEMENT

Basic problems and issues in the use of selected resources and environ-

ments. Emphasis on North America and renewable resources.

GEOG 397 (3) GEOGRAPHY OF THE NORTHLANDS

Environment, resource development and human activity with emphasis on Alaska, Yukon, Northwest Territories, Greenland and Iceland.

GEOG 519 (G) BIOPHYSICAL INVENTORY AND ANALYSIS

Biophysical inventory and mapping methodology applied to land capability and environmental impact studies. Components considered include vegetation, wildlife, topography, surficial deposits, soils, hydrology and climate.

GEOG 617 (G) ADVANCED WILDLANDS ECOSYSTEMS

Interpretation of biotic, physical and human interrelationships, classification and spatial distribution of wildland ecosystems. Involves field studies in the local area.

**RESEARCH:**

Abele, F. ARCTIC INSTITUTE OF NORTH AMERICA

Native and social issue programs-training which will enable northern native people to design social impact assessment studies and prepare submissions for regulatory hearings and public meetings; major study of native employment training programs in northern Canada.

Bankes, N. CANADIAN INSTITUTE OF RESOURCES LAW

Fairness in public participation; environmental monitoring; environmental regulation; environmental negotiation; study of EARP framework.

Barz, D. ENVIRONMENTAL DESIGN

An assessment of the British Columbia Utilities Commission Energy Project Review Process (M.ED. research).

Boyd, E. PSYCHOLOGY

Environmental impact of noise.

Copeman, M. ENVIRONMENTAL DESIGN

Visual resource evaluation and management plan for Cochrane Ranche, Alberta (M.ED. research).

Corpes, L. GEOGRAPHY

Environmental impact assessment.

Craig, F. ENVIRONMENTAL DESIGN

A proposed framework for social impact assessment in Alberta resource planning (M.ED. research).

DiSanto, J. SOCIOLOGY

Public participation research; Keephills Thermal Power Project social impact and public participation projects.

Dougherty, D. ENVIRONMENTAL DESIGN

Impacts of seismic lines on forest productivity in Alberta (M.ED. research).

Duguid, T. ENVIRONMENTAL DESIGN

Decision-making in scientific and technical controversy (Master's research).

Dunn, B. PSYCHOLOGY

Environmental impact of noise.

Elder, P.S. ENVIRONMENTAL DESIGN

Socio-economic impacts of the rise and fall of the Cold Lake project (M.ED. research).

Frideres, J. SOCIOLOGY

Assessing social impact in the North; ethnic relations and impact in multi ethnic communities; developing a methodology for assessing social impact.

KANANASKIS CENTRE FOR ENVIRONMENTAL RESEARCH

Major themes of research in the Centre relate to the science and technology of environmental quality. Major projects deal with the environmental aspects of resource development in western and northern Canada, with particular emphasis on water quality, air quality and waste management.

Koriel, H. GEOGRAPHY

Environmental impact of noise.

Legge, A. KANANASKIS CENTRE

Environmental impact assessment; multidisciplinary research and co-ordination.

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| Lucas, A. | CANADIAN INSTITUTE OF RESOURCES LAW MEMBER OF<br><br>Canadian Arctic Resources Committee; environmental law; fairness in public hearings. |
| McCraken, C. | ENVIRONMENTAL DESIGN<br><br>Socio-economic impacts of the rise and fall of the Cold Lake project (M.ED. research). |
| McKay, L. | ENVIRONMENTAL DESIGN<br><br>Environmental information management for the resource industry (M.ED. research). |
| McManus, R. | ENVIRONMENTAL DESIGN<br><br>Socio-economic impacts and transmission line planning (M.ED. research). |
| Raynard, C. | ENVIRONMENTAL DESIGN<br><br>Application of remote sensing to resource evaluation and environmental impact assessment in B.C. (M.ED. research). |
| Ross, G. | ENVIRONMENTAL DESIGN<br><br>Environmental monitoring; use of remote sensing techniques in biophysical analysis and EIA. |
| Ross, W.A. | ENVIRONMENTAL DESIGN<br><br>Member of Banff Highway Project Environmental Assessment Panel; member of CP Rail Rogers Pass Development Environmental Assessment Panel. |
| Rothwell, K. | ENVIRONMENTAL DESIGN<br><br>Overlap in federal environmental review processes: NEB and FEARO (M.ED. research). |
| Tester, F. | KANANASKIS CENTRE<br><br>Social impact assessment — program evaluation, social policy, Northern policy. |

**PROGRAM ACTIVITIES:**

A. 1) *Faculty of Environmental Design*

Is a graduate school that offers a professionally oriented program for its students. Students are encouraged to undertake practical research in which they obtain experience from "real-world" situations.

2) *Kananaskis Centre for Environmental Research*

Has facilities located on campus and at a field station located approximately 80 km west of Calgary in the Kananaskis Valley. The major themes of research in the Centre relate to the science and technology of environmental aspects of resource development in western and northern Canada. Research is funded primarily from off-campus sources, and students may be retained if their research interests are like those of members of the Centre.

3) *Arctic Institute of North America*

Is a private non-profit organization which shares a symbolic relationship with the University of Calgary. The objectives of the Institute are: to initiate, encourage, support, and advance the study of arctic conditions and problems. In conjunction with the University, a Northern Political Studies Program is offered.

The Institute operates two research facilities: the Kluane Lake Research Station and the Devon Island Research Station. In addition, the Institute publishes a quarterly scientific journal "ARCTIC" and a quarterly newsletter "INFORMATION NORTH"; maintains ASTIS — the Arctic Science and Tecnology Information System, a computerized data base; and sponsors research on various topics by interested academics.

4) *Canadian Institute for Resources Law*

The Institute offers a program that specializes in the issues and law of resources development. In particular, a major interest is the way in which environmental regulation is applied to oil and gas development.

B. EIA/SIA Core Program or Streaming?:

Although there is no particular EIA/SIA program, students at both the undergraduate and graduate levels can plan programs with the assistance of faculty members which will allow them to graduate with a degree with a concentration in EIA/SIA. In particular, students can organize a program through the Dept. of Geography, at an undergraduate level, and through the Faculty of Environmental Design at the graduate level.

C. Special Activities Related to EIA/SIA:

1) Faculty of Environmental Design. The faculty is developing specific capabilities in the application of remote sensing to impact assessment and computerized graphics for use in impact and visual assessments.

2) Department of Sociology. The department organizes colloquia on various subjects relating to Sociology. In 1982, the third annual colloquium was entitled: "The Social Responses to Technological Change and Environmental Impact."

3) Canadian Institute for Resources Law. In conjunction with FEARO and the Banff Centre, a two-day workshop on fairness and natural justice in environmental assess-

ment hearings was held in February, 1983. The proceedings of this workshop will be published. From time-to-time, the Institute also offers various other workshops and colloquia on subjects relating to EIA/SIA.

**ACTIVITÉS:**

A. 1) *Faculty of Environmental Design*

École pour étudiants diplômés qui offre un programme débouchant sur une profession. On y encourage les étudiants à entreprendre des recherches pratiques pour acquérir de l'expérience à partir de situations réelles.

2) *Kananaskis Centre for Environmental Research*

Ce centre possède des installations à l'université ainsi que dans une station régionale qui se trouve à 80 km environ à l'ouest de Calgary dans la vallée de la Kananaskis. La recherche porte surtout sur la science et la technologie des aspects environnementaux de la mise en valeur des ressources dans l'Ouest et le Nord canadiens. Les subventions proviennent principalement de sources extérieures à l'université, et les étudiants peuvent être acceptés si leurs sujets de recherche sont semblables à ceux des membres du Centre.

3) *Arctic Institute of North America*

Organisation privée sans but lucratif dont les relations avec l'université de Calgary sont symboliques. L'Institut a pour objectifs d'amorcer, d'encourager, d'aider et de faire progresser l'étude des conditions arctiques et des problèmes qui s'y rapportent. Il offre, conjointement avec l'université, un programme d'études politiques nordiques.

L'Institut exploite deux stations de recherche: l'une au lac Kluane, et l'autre, dans l'île Devon. En outre, il publie tous les trois mois une revue scientifique intitulée ARCTIC ainsi qu'un bulletin: INFORMATION NORTH; il exploite la base de données ASTIS (Arctic Science and Technology Information System) et subventionne des travaux de recherche sur différents sujets effectués par des universitaires intéressés par ce domaine.

4) *Canadian Institute for Resources Law*

L'Institut offre un programme qui porte sur les questions et les lois relatives à la mise en valeur des ressources. En particulier, il s'intéresse considérablement à la façon dont les règlements concernant l'environnement sont appliqués à l'exploitation du pétrole et du gaz.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?:

Bien qu'il n'existe pas de programme particulier dans ce domaine, les étudiants non diplômés et diplômés peuvent, avec l'aide des professeurs, organiser des programmes qui leur permettront d'obtenir un diplôme avec concentration en EIES. Plus précisément, les étudiants non diplômés peuvent organiser un programme avec les professeurs du département de Géographie, et les étudiants diplômés, avec les professeurs de la Faculty of Environmental Design.

C. Activités se rapportant à l'EIES:

1) *Faculty of Environmental Design* — la faculté se dote actuellement des moyens nécessaires pour appliquer les techniques de la télédétection à l'évaluation des incidences et aux graphiques informatisés pour les évaluations d'impacts et les évaluations ordinaires.

2) *Department of Sociology* — le département organise des colloques sur divers sujets touchant la sociologie. Le troisième colloque annuel, tenu en 1982, avait pour titre «The Social Responses to Technological Change and Environmental Impact».

3) *Canadian Institute for Resources Law* — en février 1983, un atelier de deux jours, organisé conjointement avec le Bureau fédéral d'examen des évaluations environnementales et le Banff Centre, a porté sur l'équité et la justice naturelle en matière d'évaluation environnementale. Le compte rendu des travaux de cet atelier sera publié. L'Institut organise aussi de temps à autre divers ateliers et colloques sur des sujets qui se rapportent à l'EIES.

# CARLETON UNIVERSITY


Location/Endroit: Ottawa, Ontario

Mailing Address/ Adresse: Carleton University
Ottawa, Ontario
K1S 5B6


## TEACHING:

*Department of Geography*

45.211 (2) GEOMORPHOLOGY AND ENVIRONMENTAL MANAGEMENT

Examination of earth materials, processes and hazards in relation to their physical and socio-economic importance; environmental impacts and the need for land management. Instructor: J.P. Johnson, T.P. Wilkinson.

45.311 (3) ENVIRONMENTAL MONITORING

Designed to instruct students how to carry out field, laboratory and archival investigations needed to understand physical, environmental processes and their role in the origin, history and character of specific sites and environments. Instructor: J.P. Johnson, M.W. Smith.

45.333 (3) LAND USE, REGIONAL DEVELOPMENT AND PLANNING IN CANADA

Introduction to land-use planning in Canada, with the chief emphasis on Ontario. The forces affecting land use in Canada, evolution of local and regional planning, the nature of municipal planning, the roles of government in local, regional and national planning, and relationship between conservation, regional developments and land resource planning. Selected Ontario and federal legislation is examined. Instructor: D.M. Anderson.

45.334 (3) RENEWABLE RESOURCE PLANNING IN A LOCAL AREA

A planning-oriented examination of a local river basin, aimed at developing a co-ordinated plan for renewable resource management, utilizing existing local, regional and watershed legislation in Ontario. Students work in project teams, under supervision, to develop a practical plan for land use, water resource management, urban development, recreational space and environmental preservation. Instructor: D.M. Anderson.

45.404 (4) ENVIRONMENTAL IMPACT ASSESSMENT

An examination of the principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view. The broad range of environmental and socio-economic impacts of development projects are illustrated by case studies. Instructor: M.W. Smith.

45.405 (4) PROBLEMS OF ENVIRONMENTAL IMPACT ASSESSMENT

A project-oriented course in which students apply the principles and methods of environmental impact assessment to selected development projects. Instructor: D.M. Anderson, M.W. Smith.

*Technology, Society, Environment Program*

59.300 (3) INTRODUCTION TO PROBLEMS OF INDUSTRIAL SOCIETY

A course intended to introduce students from all faculties to the study of major problems of industrialized society. Topics include: historical perspective of technology and industrialization, technology as a motive force in history and as an element in culture, ecological perspective, population and resources, impact on the natural environment, modernization process including the developing countries, technology as an agent of global integration. Instructor: P. Kruus, J. Lukasiewicz

59.401 (4) TECHNOLOGY AND SOCIETY: ASSESSMENT

The course examines the complexities and practice of evaluating the relationship and impact of technology on society and the physical environment. Specific topics include: retrospective assessment of large projects; technological horror stories — cases of mis-assessment; necessary aspects of an assessment

project; examples of Canadian technology assessment. Instructor: P. Kruus.

*Department of Law*

51.380 (3) LAW OF ENVIRONMENTAL QUALITY

The legal process relating to resource conservation and to the control and abatement of pollution of water, air and land. The common law and statutory remedies through private actions in the ordinary courts; the role of public authorities through coercive techniques such as criminal sanctions, licensing of resource use, licensing of pollution, and direct remedial actions; non-coercive techniques such as subsidies, tax incentives, public works, research and persuasion; land-use control techniques such as protecting environmnental quality; constitutional division of legislative competence concerning these matters; administrative problems of achieving interjurisdictional co-operation in activities by public authorities. Instructor: D. Good.

**RESEARCH:**

Williams, P. GEOGRAPHY

Geotechnical advisor to Alaska Highway Pipeline Environmental Assessment Panel; geotechnical advisor and team leader for Environmental Assessment Panel and other federal government agencies as required, and for the Arctic Pilot Natural Gas Project.

Good, D.R. LAW

Member of Ontario Bar; member of Ontario Institute of Agrologists; contributing editor on environmental law to the Ottawa Law Review which is comprised of two parts: general environment and environmental assessment; environmental impact assessment seminar organizer for Corpus Information.

Smith, M.W. GEOGRAPHY

Advisor to Beaufort Sea Project Environmental Assessment Panel.

**PROGRAM ACTIVITIES:**

A. 1) *Technology, Society and Environment Studies*

A program which allows students with varied backgrounds to interact on various interdisciplinary topics.

2) *Department of Geography*

Offers opportunities for study and research in many facets of EIA/SIA. The Department also operates the Geotechnical Sciences Laboratory, which focuses on aspects of northern development such as pipeline construction, and has been involved in providing expertise for environmental assessments.

B. EIA/SIA Core Program or Streaming?:

Yes. A core program is offered and is co-ordinated by the Department of Geography. The program approaches EIA from the socio-economic and biophysical bases. This program allows students to co-ordinate study programs at the undergraduate level in all associated university departments. At the graduate level, students generally specialize in various aspects of environmental assessment in the appropriate university departments.

C. Activities Related to EIA/SIA:

1) Technology, Society, Environment Public Lecture Series on topics related to Environmental Impact.

2) Various seminars and presentations on topics related to environmental impact are presented by the Department of Geography.

**ACTIVITÉS:**

A. 1) *Technology Society and Environment Studies*

Ce programme permet aux étudiants qui ont reçu une formation différente de travailler ensemble sur divers sujets interdisciplinaires.

2) *Department of Geography*

Il est possible d'y étudier un grand nombre d'aspects de l'EIES et de faire des recherches diversifiées dans ce domaine. Le département assure aussi le fonctionnement des laboratoires de sciences géotechniques où l'on s'intéresse particulièrement à des aspects de la mise en valeur du Nord comme la construction de pipelines, et on a déjà fait appel à sa compétence pour des évaluations environnementales.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?:

On offre un programme structuré qui est coordonné par le département de géographie et dans lequel l'EIE est étudiée

du point de vue socio-économique et biophysique. Ce programme permet aux étudiants non diplômés de coordonner les programmes d'étude de tous les départements associés. Les étudiants diplômés se spécialisent généralement dans diverses branches de l'évaluation environnementale enseignées dans les départements.

C. Activités se rapportant à l'EIES:

1) Série de conférences publiques sur la technologie, la société et l'environnement portant sur des sujets qui se rapportent aux incidences environnementales.

2) Le département de géographie présente divers séminaires et exposés sur des sujets se rapportant aux incidences environnementales.

# CONCORDIA UNIVERSITY

Location/Endroit: Montréal, Québec

Mailing Address/
Adresse: Sir George Williams Campus
1455 de Maisonneuve Blvd. Ouest
Montréal, Québec
H3G 1M8

Loyola Campus
7141 Sherbrooke St. Ouest
Montréal, Québec
H4B 1R6

## TEACHING:

*Faculty of Engineering*

ENRG C495 (4) ENVIRONMENTAL/SOCIAL IMPACT ASSSESSMENT

The objective of the course is to provide a practical perspective on the concepts, principles and process of Environmental and Social Impact Assessment (EIA/SIA), with special emphasis on case studies of major energy development projects in Canada. Guest lecturers from government, consulting engineering firms, business and academic communities analyze current issues pertaining to these case studies. Active participation of students in discussion and guided research papers are central to the teaching/learning process of the course. Instructor: B. Goldsmith.

## RESEARCH:

Goldsmith, B. SOCIAL ASPECTS OF ENGINEERING

Research on the principles, procedures and application of EIA/SIA; consultant to André Marsan & Associés on the LNG Terminal at Gros Cacouna, Québec; social dimensions of environmental planning; compiling teaching/reading module on EIA/SIA for social aspects of engineering, Concordia University.

## PROGRAM ACTIVITIES:

A. None indicated.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

## ACTIVITÉS:

A. Aucunes.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

# DALHOUSIE UNIVERSITY

Location/Endroit: Halifax, Nova Scotia

Mailing Address/ Adresse: Dalhousie University
Halifax, Nova Scotia
B3H 3J5

**TEACHING:**

*Institute for Resource and Environmental Studies*

ES 5000R (G) INTRODUCTION TO ENVIRONMENTAL STUDIES

This fundamental course is devoted to general study of environmental systems, and to present-day approaches to understanding and solving resource and environmental dilemmas. The lectures give special emphasis to holistic approaches, perceptions, the assessment of environmental hazards and benefit/cost trade-offs. Environmental indicators, monitoring programs, including the use of remote sensing techniques, and various responses to growth phenomena are covered. Instructor: A. Hanson, P. Taschereau and staff.

ES 5001B (G) ENVIRONMENTAL ASSESSMENT

The complex nature of environmental impact assessment and decision-making is best examined through case study analysis. Thus lectures serve as a background for the main purpose of the course which is to develop class projects on environmental assessment. These are based on existing experiences and problems of current resource or environmental concern in Canada. Students are expected to meet with government officials, citizen groups and others to assemble the relevant information for a thorough analysis of the problem. This effort is intended to provide students an exposure to the teamwork required in environmental analysis. Instructor: G. Beanlands and staff.

ES 5200B (G) INTRODUCTION TO ENVIRONMENTAL LAW

Topics include the environmental assessment process, including readings on both the federal and provincial environmental assessment processes and the U.S. National Environmental Policy Act. The course will make no attempt to provide a comprehensive survey of the substantial corpus of Canadian environmental law. The rapidity of change would quickly make much of this knowledge obsolete, and such an overview course would be of little value in developing a sophisticated understanding of the relationship between law and the environment. Instead, the aim is to focus on those issues common to essentially all environmental problems, and to provide an analytical framework that will be generally useful. Instructor: B. Wildsmith, S. Mills.

ES 5110A (G) NATURAL RESOURCE ECONOMICS

Instructor: M. Cross.

ES 5300A (G) NATURAL RESOURCE ADMINISTRATION

Instructor: P. Pross.

**RESEARCH:**

Beanlands, G. INSTITUTE FOR RESOURCE AND ENVIRONMENTAL STUDIES

Environmental assessment methodologies; ecological basis for environmental assessment; ecological content of environmental impact statements.

Brown, A.P. PUBLIC ADMINISTRATION

Policy relating to land use.

Coffey, W.J. INSTITUTE OF PUBLIC AFFAIRS

Local development impacts.

Duinker, P. INSTITUTE FOR RESOURCE AND ENVIRONMENTAL STUDIES

Ecological basis for environmental assessment.

Hanson, A. INSTITUTE FOR RESOURCE AND ENVIRONMENTAL STUDIES

Environmental assessment; bilateral aid and the environment for the International Institute for Environment and Development; environmental research and training in Indonesia.

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| Harvey, A.S. | INSTITUTE OF PUBLIC AFFAIRS<br>Socio-economic impact; industrial development. |
| Kasdan, L. | INSTITUTE FOR RESOURCE AND ENVIRONMENTAL STUDIES<br>Monitoring of development activities related to oil and gas exploitation; comparative assessment of Newfoundland and Nova Scotia approaches to social and economic impact studies; impacts of oil and gas development on three isolated communities. |
| Mills, S. | FACULTY OF LAW<br>Environmental law; environmental mediation; environmental assessment reporting. |
| Wildsmith, B. | FACULTY OF LAW<br>Environmental law. |
| Wood, K.S. | INSTITUTE OF PUBLIC AFFAIRS<br>Regional impacts of offshore hydrocarbons; definition of core social indicators; managing social impacts from large scale industrial complexes — Norway's experience. |

**PROGRAM ACTIVITIES:**

A. 1) *Institute for Resource and Environmental Studies.*

The Master of Environmental Studies (M.E.S.) degree program is at the core of the Institute's activities. The program is designed to provide a professional education in fields such as resource ecology and management, environmental policy and administration, and pollution studies. Particular emphasis is given to understanding environment and development relationships in either Canadian or Third World settings.

2) *Dalhousie Ocean Studies Programme.*

The Ocean Studies Programme is an interdisciplinary research programme which examines topics relating to ocean resource development. The areas of enquiry relate primarily to ocean law, ocean policy development and management of ocean resources.

3) *Institute of Public Affairs.*

The aim of the Institute is to bring university research resources to bear on the economic and social problems of Canada, and in particular, of the Atlantic region. The Institute takes a multidisciplinary approach to the research it undertakes.

B. EIA/SIA Core Program or Streaming?:

No, however, as in the case of other universities mentioned in this directory, a program is offered to train professionally-oriented, well-rounded graduates in the field of environmental studies. Students are given the opportunity to specialize in the study and research of EIA/SIA at the graduate level through the various institutes in particular, IRES.

C. Activities Related to EIA/SIA:

1) Seminars, conferences and workshops sponsored by the research institutes on campus on subjects related to EIA/SIA.

2) Detailed student team projects which are undertaken by students in IRES.

3) Co-ordinated research and workshop activities in conjunction with other universities located in Halifax.

**ACTIVITÉS:**

A. 1) *Institute for Resource and Environmental Studies*

Le programme qui débouche sur une maîtrise en études environnementales (M.E.S.) constitue le noyau des activités de l'Institut. Le programme est conçu pour fournir une formation dans des domaines comme la gestion et l'écologie des ressources, les politiques relatives à l'environnement et l'administration, et la pollution. On met particulièrement l'accent sur la connaissance de l'environnement et ses rapports avec le développement au Canada ou dans le tiers monde.

2) *Dalhousie Ocean Studies Programme*

Programme de recherche intradisciplinaire sur des sujets qui se rapportent à l'exploitation des ressources de la mer. La recherche porte surtout sur le droit de la mer, l'élaboration des politiques relatives à la mer et la gestion des ressources marines.

3) *Institute of Public Affairs*

L'Institut a pour but l'utilisation des ressources de l'université dans le domaine de la recherche pour étudier les problèmes socio-économiques du Canada en général et de la région de l'Atlantique en particulier. Les travaux de recherche qu'il entreprend ont un caractère multidisciplinaire.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?:

Non, cependant, comme c'est le cas pour d'autres universitésmentionnées dans le présent répertoire, ce qui est offert a pour but de former des diplômés en études environnementales qui soient compétents et dont la formation débouche sui une profession. Les différents instituts, en particulier l'IRES

(Institute for Resource and Environmental Studies), permettent aux étudiants diplômés de se spécialiser en EIES et de faire des recherches dans ce domaine.

C. Activités se rapportant à l'EIES:

1) Séminaires, conférences et ateliers sur des sujets se rapportant à l'EIES, organisés à l'université par les instituts de recherche.

2) Projets détaillés entrepris en équipe par les étudiants de l'Institut des ressources et des études environnementales.

3) Travaux de recherche et d'atelier réalisés conjointement avec d'autres universités qui se trouvent à Halifax.

# ÉCOLE POLYTECHNIQUE DE MONTRÉAL

Location/Endroit: Montréal, Québec

Mailing Address/ Adresse: Campus de l'Université de Montréal
Case postale 6079
Succursale «A»
Montréal, Québec
H3C 3A7

## COURS:

1.528 (4) ENVIRONNEMENT

(niveau baccalauréat)

Hygiène des milieux: conception d'une installation septique, normes. Les déchets solides: décharge contrôlée, compostage, incinération, pyrolyse. La pollution atmosphérique: nature, sources et mesures des polluants, remèdes. Impacts des projets sur l'environnement: concepts, techniques d'évaluation et étude de cas. Pollution par le bruit: mesure, sources, effets du bruit, lutte contre le bruit. Notions écologiques: rupture des écosystèmes et effets des polluants toxiques (métaux lourds, pluies acides...). Coordonnateur: C.E. Delisle.

1.6286 (G) IMPACTS DES PROJETS SUR L'ENVIRONNEMENT

(niveau maîtrise)

Principes directeurs et rapport environnemental. Ecologie humaine et étude de cas. Evaluation des données écologiques et écologie appliquée aux études d'impact. Aspect économique. Aspect légal. Projet d'aménagement, phases techniques et objectifs des activités relatives à l'environnement. La matrice d'impacts et ses paramètres. Techniques d'identification et d'évaluation des impacts. Techniques Léopold et al., Batelle, Sorensen, Odum, Homes, McHorg, etc. Modélisation: modèles écologiques, modèles fluviaux. Simulation écologique aquatique. Étude de cas. Coordonnateur: A.J. Drapeau, C.E. Delisle.

PE.410 (4) ÉCOLOGIE APPLIQUÉE POUR INGÉNIEURS

(niveau baccalauréat)

Notions générales d'écologie. Structure et fonctionnement de la biosphère. Dynamique des populations et des écosystèmes. Interrelations entre environnements physiques, chimiques et biologiques. Indicateurs biologiques. Réseaux de surveillance de pollution de la biosphère. Flux d'énergie dans les écosystèmes. Applications de l'écologie à l'ingénierie. Quantification des phénomènes écologiques. La surexploitation des ressources naturelles et la limite de la biosphère. Cas types d'impacts écologiques. Effets écologiques des impacts et contaminants sur le milieu et l'homme. Instructeur: C.E. Delisle.

1.6991 (G) SÉMINAIRES — ENVIRONNEMENT

(niveau maîtrise)

Exposés et discussions de sujets choisis en rapport avec les cours ou les travaux de recherches de la Section du génie de l'Environnement. Discussions de publications récentes. Les séminaires seront à orientation écologique. Conférenciers et présentations individuelles. Instructeur: C.E. Delisle.

## RECHERCHE:

Brière, F. Commissaire ad hoc du Bureau d'Audiences publiques sur l'environnement du Gouvernement du Québec.

Delisle, C.E. Étude des répercussions environnementales de l'extension du port de Québec; études des répercussions sur l'environnement de l'ouvrage de contrôle sur la rivière des Mille Iles; études des répercussions environnementales: usine de pâte Kraft blanchie Donohue St-Félicien,inc.; aménagement portuaire Leslie, Iles-de-la-Madeleine: Étude d'impact sur l'écosystème marin, composition et mouvement des populations de homards.

Drapeau, A.J. Directeur scientifique de la publication EAU DU QUEBEC; recherche sur les méthodologies d'étude des impacts.

## ACTIVITÉS:

A. 1) *Centre d'ingénierie nordique de l'École Polytechnique*

Organisme de recherche pluridisciplinaire et interuniversitaire qui regroupe des ingénieurs oeuvrant dans

plusieurs domaines, ainsi que des spécialistes des sciences humaines qui s'intéressent au développement socio-économique du Nord, à l'exploitation rationnelle de richesses naturelles, à la mise en oeuvre de grands ouvrages et à l'établissement physique des agglomérations nordiques, y compris les approvisionnements hydriques et énergétiques.

2) *Section du Génie de l'Environnement*

Dans ce qui est offert par cette section de l'École, on essaie de donner aux étudiants en génie une expérience pratique des problèmes de génie de l'environnement. Il existe des liens très étroits entre l'École et des organisations professionnelles comme les sociétés d'experts-conseils et d'exploitation qui fournissent aux étudiants l'occasion d'être confrontés à des problèmes réels lors des cours pratiques et des travaux de recherche.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?:

Ni l'un ni l'autre. Ce qui est offert a pour but principal de servir d'introduction aux cours professionnels de génie de l'environnement.

C. Activités se rapportant à l'EIES:

1) En plus de ce qui précède, l'École commandite une série annuelle de séminaires auxquels participent le personnel, les étudiants et les chercheurs du gouvernement et de l'industrie. Les documents sont ensuite réunis, révisés et publiés annuellement sous forme de volume dont les sujets se rapportent à l'évaluation et au génie de l'environnement.

2) Plusieurs membres de l'École participent à la publication d'une revue de recherche intitulée EAU DU QUÉBEC dont l'un des principaux points d'intérêt est le génie de l'environnement dans le domaine de l'eau et de l'évaluation environnementale.

**PROGRAM ACTIVITIES:**

A. 1) *Centre d'ingénierie nordique de l'École Polytechnique.*

The Centre is, in fact, a multidisciplinary and interuniversity research agency which includes engineers working in several fields and specialists in human sciences who are interested in soci-economic development in North, the rational use of natural resources, implementation of large-scale projects and the physical establishment of northern communities, including their water and energy supply.

2) *Section du génie de l'environnement.*

The programme offered by this part of the school attempts to give engineering students "hands-on" experience with regard to environmental engineering problems. A very close relationship exists between the school and professional organizations such as consulting firms and development companies, which allows students the opportunity to grapple with "real-world" problems during practical sections of courses and during research.

B. EIA/SIA Core Program or Streaming?:

No. The program is designed primarily as an introduction to professional environmental engineering.

C. Activities Related to EIA/SIA:

1) Aside from the close ties the school has with the resources community, the school sponsors an annual series of seminars by staff, students, government, and industry researchers. The papers are collated and edited and published in a yearly volume of subjects relating to assessment and environmental engineering.

2) Many members of the school are involved in the publication of a research periodical "EAU DU QUÉBEC". A major focus of this periodical is environmental engineering as it relates to water and environmental assessment.

# UNIVERSITY OF GUELPH

Location/Endroit: Guelph, Ontario

Mailing Address/
Adresse: The University of Guelph
Guelph, Ontario
K1R 7G2

## UNIVERSITY OF GUELPH

*Department of Geography*

45.311 (3) BIOPHYSICAL ENVIRONMENTAL RESOURCES

This is the third in the biophysical sequence of courses. It deals with the processes and characteristics of the biophysical environment, and takes as its major theme the evaluation of the biophysical environment as a resource. As such it complements 45.321 which deals with the management aspects of this resource.

Any use of the biophysical environment means some impact on that environment. The course begins with the attempts that have been made to model this impact. It then calls for an examination of some types of impact going back to prehistoric times, considers arguments concerning the degree and causes of this impact and these arguments are put in the context of changing awareness and approaches. Then a section follows dealing with some very recent examples of environmental impact. The third section deals with more detailed studies of impact on individual environmental components such as water. The final section deals briefly with methods of evaluation of impact, techniques of analysis and so on. Instructor: M. Moss.

45.321 (3) MANAGEMENT OF THE BIOPHYSICAL ENVIRONMENT

Issues in the relationship between man and his biophysical environment. The course aims to develop an understanding of basic concepts and methods in resource management and apply these to contemporary resource and environmental problems. Emphasis is on the economic, social and environmental implications of man's development, use and management of biophysical resources, with particular reference to Canada and Ontario. The course introduces resource concepts of capability, capacity and conflict and examines resource management problems from a human ecological perspective which emphasizes the relationship between the biophysical environment and man's technology, perceptions and attitudes, and institutional arrangements. It complements 45.311 which emphasizes biophysical processes. Instructor: R. Kreutzwiser.

45.628 (G) RURAL ENVIRONMENTAL RESOURCES

Analysis and management of rural non-agricultural resources. Emphasis is upon techniques for the biophysical and socio-economic analysis of particular environments such as forests, wetlands and shorelines.

85.400 (4) RESEARCH PROJECT IN ENVIRONMENTAL STUDIES

This is a directed research paper course required of all senior students in the Environmental Studies minor and provides an opportunity for students to formulate and investigate an issue of current environmental concern.

*Department of Land Resource Science*

87.250 (2) PROBLEM SOLVING IN LAND RESOURCE SCIENCE

The concept of environmental assessment is in the context of problem solving.

87.305 (3) LAND UTILIZATION

87.310 (3) RESOURCES PLANNING AND MANAGEMENT

Techniques of impact analysis (matrix analysis) are covered in this course.

87.415 (4) DECISION-MAKING IN RESOURCE MANAGEMENT

**RESEARCH:**

| | |
|---|---|
| Hilts, S. | SCHOOL OF RURAL PLANNING AND DEVELOPMENT<br>Environmental impact analysis; performance of environmental assessments. |
| Kreutzwiser, R. | GEOGRAPHY<br>Socio-economic significance; impact of outdoor recreation. |
| Moss, M. | GEOGRAPHY<br>Process approach to biophysical land classification. |
| Smit, B.E. | GEOGRAPHY<br>Land evaluation and rural land-use planning; impacts of urban growth; community services development. |
| Wolfe, J.S. | GEOGRAPHY<br>Community involvement in land use planning for rural areas; public participation. |

**PROGRAM ACTIVITIES:**

A. *Environmental Studies Minor Honours Program.*

This is an interdisciplinary option in the B.A. program designed to provide students with an opportunity to develop an understanding of human and biophysical roots of environmental problems. The program consists of a minimum of 10 semester courses, with a required core of 5 biological (ecology) and social science courses, and a minimum of 5 elective courses in botany, zoology, land resource science, economics, geography, sociology, political studies and landscape architecture. A number of courses in the program deal, in part, with EIA and SIA or provide a basis for impact assessment. The Program is administered by the Department of Geography.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

The Department of Geography in conjunction with Geography at Wilfrid Laurier University sponsors the Geographical Inter University Resource Management Seminars (GIRMS). Five dinner-seminars are held annually to bring together academics, civil servants and consultants interested in resource management. Many of the seminars relate to EIA or SIA. The proceedings of the GIRMS are published annually by Wilfrid Laurier University. Further information on publications and membership can be obtained from Dr. Jerry Hall, Department of Geography, Wilfrid Laurier University, Waterloo, Ontario.

**ACTIVITÉS:**

A. *Environmental Studies Minor Honours Program*

Études interdisciplinaires au niveau du B.A. qui permettent aux étudiants de mieux connaître les causes humaines et biophysiques des problèmes environnementaux. Elles consistent en un minimum de 10 cours par semestre, dont cinq cours obligatoires en biologie (écologie) et en sciences sociales et un minimum de cinq cours optionnels en botanique, en zoologie, en sciences de la Terre, en économie, en géographie, en sociologie, en politique et en architecture paysagiste. Un certain nombre de cours portent, en partie, sur l'EIES ou servent de préparation à l'évaluation des incidences. C'est le département de géographie qui est responsable de ce programme.

B. Y a-t-il un programme portant spécialement sur l'EIES ou, à défaut une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

Le département de géographie, conjointement avec celui de l'université Wilfrid Laurier, commandite les séminaires géographiques interuniversités sur l'aménagement des ressources (GIRMS). Chaque année, cinq dîners-séminaires réunissent des universitaires, des fonctionnaires et des consultants intéressés par la gestion des ressources. Un grand nombre de séminaires portent sur l'évaluation des incidences environnementales ou sociales. Les comptes rendus des travaux des GIRMS sont publiés chaque année par l'université Wilfrid Laurier. Pour obtenir plus de renseignements sur les publications et la participation aux séminaires, prière de s'adresser au Dr Jerry Hall, Department of Geography, Wilfrid Laurier University, Waterloo, Ontario.

# UNIVERSITÉ LAVAL


Location/Endroit: Québec, Québec

Mailing Address/ Adresse: Université Laval
Cité Universitaire
Québec, Québec
G1K 7P4


**COURS:**

*Département de génie civil*

GCI-62994 (2) IMPACTS DES PROJETS SUR L'ENVIRONNEMENT

Cadre législatif des études d'impact au Canada et au Québec. Initiation aux techniques d'évaluation des répercus sions environnementales. Revue des principes et méthodes de l'écologie appliquée à l'évaluation des impacts. Études de cas types sur de projets en cours. Instructeur: J.B. Sérodes.

*Aménagement du territoire et développement régional*

AME-62828 (2) AMÉNAGEMENT ET ENVIRONNEMENT

Les problèmes de l'environnement physique et humain étudiés dans le contexte de l'aménagement du territoire et du développement régional. Dégradations de l'environnement et étude systématique des pollutions. Développement économique et conservation. Processus de la planification. Contraintes et blocages. Exemples québécois, canadiens, européens et africains. Instructeur: M. Maldague.

AME-62832 (2) GESTION DE L'ENVIRONNEMENT TROPICAL

Problèmes généraux des régions tropicales. Gestion des ressources naturelles: eaux, sols, forêt. Systèmes de production. Stratégie du développement intégré. Santé et hygiène; énergie. Feux de brousse, surpâturage et surculture. Environ nement et dévelopment. Organisations internationales. Education mésologique appliquée. Problème de la désertification. Parcs nationaux et réserves de la biosphère. Problèmes d'actualité. Instructeur: M. Maldague.

AME-63141 (3) LES BASES BIOPHYSIQUES DE L'AMÉNAGEMENT DU TERRITOIRE

Problèmes d'utilisation du sol et de l'aménagement du territoire au Québec méridional, notamment dans les zones marginales, les région touristiques et les zones de frange périurbaine. Systèmes de classement des sols selon leurs possibilités agricoles, récréatives, forestières et fauniques. Méthodes d'intégration des données et la confection de cartes de zonage biophysique. Analyse en profondeur d'un cas d'étude (région Mirabel). Excursions dans la région de Québec et travaux d'équipes sur des cas concrets. Instructeur: P. Clibbon.

*Département de géographie*

GGR-60441 ( ) INVENTAIRE DU CAPITAL-NATURE

Cours de 2e cycle. Initiation à la méthode québecoise d'inventaire écologique du territoire. Mise en application pratique et concrète de cette méthode dans le territoire de l'agglomération de Québec. Recherche collective et interdisciplinaire sur les applications de l'inventaire du capital-nature pour l'aménagement du territoire. Mise au point d'une méthodologie de caractérisation des écosystèmes urbains. Instructeur: M. Jurdant.

GGR-10605 ( ) UTILISATION DU SOL

Cours de 1er cycle. Conscientisation du gaspillage des ressources naturelles au Québec. Conscientisation des liens entre le pillage des ressources naturel les du tiers-monde et l'utilisation des sols du Québec. Connaissance des systèmes de classement des terres généralement utilisés au Canada. Connaissance des interrelations entre l'étude du milieu bio-physique et les potentiels pour diverses ressources naturelles renouvelables. Introduction à la notion d'éco-développement. Conscientisation de la nécessité d'une participation des citoyens aux décisions relatives à l'utilisation du sol. Instructeur: M. Jurdant.

**RECHERCHE:**

| | |
|---|---|
| Jurdant, M. | GÉOGRAPHIE<br><br>Méthodes de classification écologique à grande échelle dans les territoires écologiquement sensibles; méthode de caractérisation écologique des écosystèmes urbains; analyse des mouvements sociaux et politiques en relation avec l'écologie. |
| Migneron, J.G. | CENTRE DE RECHERCHES EN AMÉNAGEMENT ET EN DÉVELOPPMENT<br><br>Impact du bruit des autoroutes et des grands projets de développement. |
| Robert, M.L. | CENTRE DE RECHERCHES EN AMÉNAGEMENT ET EN DÉVELOPPMENT<br><br>La restauration des logements: ses effets sur l'environnement. |
| Sérodes, J.-B. | GÉNIE CIVIL<br><br>Étude de la sédimentation intertidale de l'estuaire moyen du Saint-Laurent; acquisition de données de base sur les processus sédimentaires et le pouvoir de transformation des polluants et des nutriments par les zones intertidales; expertise dans l'étude des impacts biophysiques concernant l'extension du Port de Québec et divers projets de dragage; méthodologie d'étude des impacts physiques sur les estuaires des rivières nordiques du Québec à la suite de leur aménagement hydro-électrique. |

**ACTIVITÉS:**

A. 1) *Génie civil*

Le programme a comme sujet principal les conséquences des projets sur l'environnement. Il a pour but de faire connaître aux étudiants en génie les points dont il faut tenir compte lors de la conception et de la réalisation des projets pour que ces derniers ne comportent pas de risques.

2) *Département de Géographie*

Les membres du département abordent la question de l'EIES du point de vue de la mesure des divers facteurs qui doivent être pris en considération pour que les projets importants soient mis en œuvre en respectant le plus possible l'environnement. «Éco-développement» et «intervention écologique» sont des notions très importantes employées pour l'étude de l'exploitation.

3) *L'aménagement des territoires et le développement régional*

L'évaluation des incidences environnementales et sociales dans l'aménagement des territoires et le développement régional est étudiée dans le contexte de la planification écologique. Les étudiants se familiarisent avec les différentes façons de mesurer les ressources biophysiques ainsi qu'avec les conflits d'utilisation inhérents à la mise en valeur de ces ressources.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

**PROGRAM ACTIVITIES:**

A. 1) *Génie civil*

The effect of projects on the environment is the major area of study related to EIA/SIA. The program is designed to give engineering students an understanding of the considerations that must be taken into account in the design and operation of projects, and for their safe operation.

2) *Département de géographie*

The approach taken by members of the department to EIA/SIA is in terms of the measurement of the various factors which must be taken into account for the most ecologically sound development of capital projects. The concepts of "eco-development" and "ecological intervention" play a large role in the way in which development is studied.

3) *L'aménagement des territoires et le développement régional*

EIA/SIA are examined in the context of environmental planning. Students are exposed to various ways of measuring biophysical resources, and the use conflicts inherent in their development.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

# McGILL UNIVERSITY

Location/Endroit: Montréal, Québec

Mailing Address/ Adresse: McGill University
845 Sherbrooke St. Ouest
Montréal, Québec
H3A 2T5

**TEACHING:**

*Department of Renewable Resources, Macdonald Campus*

375-437B (4) ASSESSING ENVIRONMENTAL IMPACT

The theories and procedures of various methods of assessing environmental impact. An examination of the environmental impact statements to examine the accuracy with which they were able to predict the consequences and attenuate undesirable effects. Instructor: J. Doucet.

375-415A (4) LAW AND THE PROTECTION OF FAUNA AND FLORA

Instructor: Carswell and Guthrie.

*Department of Soil Science, Macdonald Campus*

372-325B (3) PRINCIPLES OF LAND PLANNING

A study of the principles involved in land planning. Includes an historical review, discussion of ecological, social, economic, political and legal factors involved in making decisions for the best and most appropriate use of land. Instructor: G. Millette.

*Department of Anthropology*

150-446B (4) APPLYING ANTHROPOLOGY: THE DIALECTIC OF THEORY AND DATA

Analysis of the varying roles of anthropologists in applied situations, as evaluators, advocates, technical experts, or policy advisors. The utilization of theory, methods and data in each role. Instructor: Staff.

151-634D (G) ANTHROPOLOGY OF DEVELOPMENT

Examination of how macro-theories of social development and cultural change apply in the study of small communities. Consideration of how data obtained from community studies can be used to improve planning.

*School of Urban Planning*

409-603D (G) PLANNING PROJECTS I (STUDIO)

This studio introduces students to practical problems based on actual cases. Instructor: J. Wolfe, Farley and staff.

409-604A (G) PLANNING PROJECTS II

The second year is designed to permit the study of planning problems in depth. Problems are chosen depending on the experience and research interests of the participants, or for their topical nature. Instructor: D. Brown and staff.

409-610/611 (G) MAN AND ENVIRONMENT I AND II

The purpose of these courses is to expose students to the broad range of principles and practices which are employed by planning professionals in the solution of diverse practical planning problems. Instructor: Staff and visitors.

409-614B (G) URBAN ENVIRONMENTAL PLANNING

Examination and evaluation of methodologies pertaining to the assessment of environmental impact in the urban context and the integration of diverse environmental elements directly within the urban planning process. Consideration is given to both theoretical and practical issues. The quality of recent professional reports is assessed. Instructor: D. Brown.

*Department of Geography*

183-503B (G) ENVIRONMENTAL IMPACT EVALUATION

Theory and methods. A study of the development and application of environmental impact evaluation noting the theoretical basis and practical shortcomings of various methodologies. Emphasis on the means of accurately assessing impacts on physical systems and evaluating the significance of those

impacts in terms of human usage of the affected systems. Instructor: T. Meredith.

*Department of Economics — Macdonald Campus*

334-33A (3) RESOURCE ECONOMICS

To develop an understanding of the role of resources in the environment, use of resources, and management of economic resources within a firm or organization. Problem solving, case studies involving private and public decision-making in organizations are utilized.

*Centre for Northern Studies and Research*

197-604A (G) NORTHERN ECOLOGY AND RENEWABLE RESOURCES

Structure and function of northern ecosystems; plant and animal distributions, seasonality, migrations; fish and fisheries—present and potential exploitation; marine and terrestrial mammals-game management and the fur industry; principles and practice of environmental impact assessment case studies.

**RESEARCH:**

Bider, R. RENEWABLE RESOURCES

Evaluation of caribou resources of the Caniaspicau area prior to the closing of the Caniaspicau dike, for La Societé Énergie de la Baie James; evaluation of the wildlife habitat mitigation programs undertaken in the LG-2 reservoir, for La Societé Energie de la Baie James.

Brown, D. SCHOOL OF URBAN PLANNING

An analysis of the physical and social effects of a rapid rail system in an urbanized area. On contract to Le Conseil de Transport de la région de Montréal, 1980.

Meredith, T. GEOGRAPHY

Assessment of the requirements for cross-cultural EIA.

Millette, G. RENEWABLE RESOURCES

Consulting- Development of the Chixoy River Valley in Guatemala, for Lavalin International; Agro-pastoral development in the Sahel, UNDP.

Salisbury, R.F. PROGRAMME IN THE ANTHROPOLOGY OF DEVELOPMENT

Impact of Development of Ross River, Yukon — report used in community consultation; SIA in mining engineering developments; *Decentralising Development*, a review of ten years of experience with the effects of the James Bay project, and its reviewing processes; the social impact of the Nottaway-Broad back-Rupert hydro development in northern Québec for SEBJ.

**PROGRAM ACTIVITIES:**

A. 1) *Macdonald College*

The Faculty of Agriculture is centred at Macdonald College in Ste. Anne de Bellevue. In particular, members of the Department of Renewable Resources Development are involved in the teaching and research of subjects related to SIA. Also located on campus is the Brace Research Institute for Appropriate Technology.

2) *Centre for Northern Studies and Research*

The Centre was established to encourage and to coordinate the planning of research at McGill University into socio-economic and environmental problems of the North. The graduate diploma in northern studies is part of the program offered by the Centre. Apart from its facilities on McGill campus proper, the Centre operates a Subarctic Research Station at Shefferville, and an arctic field station on Axel Herberg Island, N.W.T.

3) *School of Urban Planning*

The objective of the School is to produce qualified professional urban planners for the public and the private sectors. The School's activities address such topics as: control of the use of land, design of the urban environment including transportation and communication networks, protection and enhancement of the natural environment, and the political decision-making process.

4) *Minor Program in Environmental Studies*

The philosophy behind the minor is that students with specific training in an "home" department can form the necessary links with other disciplines through the minor program in the study of various aspects of environmental problems.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

1) Professional development seminars organized by the Department of Mining Engineering that often address SIA aspects.

2) Centre for Northern Studies and Research organizes seminars on topics related to the effects of northern development on northern society.

## ACTIVITÉS:

A. 1) *Macdonald College*

La faculté d'agriculture se trouve au Macdonald College, à Sainte-Anne-de-Bellevue. En particulier, les membres du département de la Mise en valeur des ressources renouvelables s'occupent d'enseignement et de recherche sur des sujets se rapportant à l'évaluation des incidences sociales. Le *Brace Research Institute for Appropriate Technology* se trouve aussi sur le campus du Collège.

2) *Centre for Northern Studies and Research*

Le Centre a été créé pour encourager et coordonner, à l'université McGill, la planification de la recherche sur les problèmes socio-économiques et environnementaux du Nord. Il offre un programme qui débouche sur un diplôme en études nordiques. En plus de posséder des installations sur le campus même de l'université McGill, le Centre exploite une station de recherche subarctique à Shefferville ainsi qu'une station régionale arctique sur l'île Axel Herberg, dans les Territoires du Nord-Ouest.

3) *School of Urban Planning*

L'école a pour objectif de former des planificateurs urbains professionnels et qualifiés pour les secteurs publics et privés. On y enseigne des sujets comme le contrôle de l'utilisation des terres, la conception de l'environnement urbain, y compris les réseaux de transport et de communications, la protection et la mise en valeur de l'environnement naturel, et le processus décisionnel politique.

4) *Minor Programme in Environmental Studies*

L'idée maîtresse de ce programme est que les étudiants qui y participent tout en acquérant une formation spécialisée dans un département peuvent établir les rapports nécessaires avec d'autres disciplines au cours de l'étude des différents aspects des problèmes environnementaux.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

1) Le département de Génie minier organise des séminaires de perfectionnement professionnel qui portent souvent sur des aspects de l'évaluation des incidences sociales.

2) Le Centre d'études et de recherches nordiques organise des séminaires sur des sujets qui se rapportent aux conséquences du progrès sur la mise en valeur du Nord ou les habitants du Nord.

# McMASTER UNIVERSITY

| | |
|---|---|
| Location/Endroit: | Hamilton, Ontario |
| Mailing Address/ Adresse: | McMaster University<br>Hamilton, Ontario<br>L8S 4L8 |

## RESEARCH:

| | |
|---|---|
| Hall, R.H. | BIOCHEMISTRY |
| | Development of a demonstration city in Canada that has as its objective the minimizing of pollution and environmental impact in an urban setting. |

## PROGRAM ACTIVITIES:

A. None indicated.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

## ACTIVITÉS

A. Aucune.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

# THE UNIVERSITY OF MANITOBA

Location/Endroit: Winnipeg, Manitoba

Mailing Address/ Adresse: The University of Manitoba
Winnipeg, Manitoba
R3T 2N2

**TEACHING:**

*Department of Zoology*

22:471 (2) WILDLIFE MANAGEMENT

Introduction to the biological and socio-economic goals of wildlife management and to the basic techniques of wildlife management in terms of these goals. There will be four or five weekend field trips. Instructor: R. Riewe

22:741 (G) BIOLOGICAL RESOURCE MANAGEMENT

Instructor: R. Riewe

*Faculty of Law*

45.360 (3) ENVIRONMENTAL LAW

The balance between technical development and the life-support capacity of the environment. The acquisition and nature of private rights in natural resources and their control by legislation and common. Remedies for environmental degradation, constitutional and international legal issues.

*Natural Resources Institute*

56.707 (G) READING IN SOCIAL AND ECONOMIC IMPACT ASSESSMENT

Instructor: W. Everett.

56.708 (G) ENVIRONMENTAL IMPACT ASSESSMENT

Instructor: R. Riewe.

56.710 (G) RESEARCH METHODS

Instructor: T. Henley.

81.228 (G) ENVIRONMENTAL ECONOMICS

Instructor: J. Grey.

81.710 (G) SEMINAR IN ENVIRONMENTAL EDUCATION

Instructor: H. Williams.

*Department of Civil Engineering*

23.264/265 (2) TECHNOLOGY AND SOCIETY I & II

History of technology and its effect upon society. Causes of technology and economic growth. Current problems: environmental impact, water quality, waste treatment, stream pollution, eutrophication, solid wastes, air pollution and housing.

**RESEARCH:**

Henley, T. NATURAL RESOURCES INSTITUTE

Environmental education, socio-economic impact.

Larsen, N. FACULTY OF LAW

Environmental impact of mosquito fogging.

Roberts, L. SOCIOLOGY

Environmental and social impact assessment (in northern context); northern native employment; member, environmental assessment panel — Shoal Lake Cottage Lot Development; advisor and contributor to institute for Social and Economic Research.

Tamburi, A. CIVIL ENGINEERING

EIA as it relates to water resources; environmental impact of developing a deep water navigation channel on the lower Fraser River; EIA of Roberts Bank superport expansion.

**PROGRAM ACTIVITIES:**

A. *Natural Resources Institute*

1) to teach resource management skills leading to the Masters of Natural Resource Management degree,

2) to conduct useful research in current problems of natural resource management, and,

3) to provide a forum for examination of resource issues and thus raise the level of public awareness.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

Natural Resources Institute sponsor numerous seminars by people in academe, government and industry (for example, in spring 1982, Ecological Basis for EIA — Dr. G. Beanlands, several workshops with Manitoba Hydro, and with the Manitoba Environmental Assessment and Review Agency).

## ACTIVITÉS:

A. *Natural Resource Institute*

1) Pour enseigner les connaissances dans le domaine de la gestion des ressources menant à un degré M.N.R.,

2) pour mener une recherche utile dans le cadre des problèmes courants de gestion de ressources naturelles, et,

3) pour servir de forum pour l'examen des problems concernant les ressources et de ce fait eveiller l'intérêt du public.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

Le Natural Resource Institute parraine plusieurs séminaires tenus dans les universités, les gouvernements, et l'industrie, (par exemple, au printemps de 1982, le séminaire pour un Cadre Ecologique pour l'évaluation environnementale au Canada, divers ateliers avec Manitoba Hydro, et Manitoba Environmental Assessment and Review Agency).

# MEMORIAL UNIVERSITY OF NEWFOUNDLAND


Location/Endroit: St. John's, Newfoundland

Mailing Address/ Adresse: Memorial University of Newfoundland
Elizabeth Avenue
St. John's, Newfoundland
A1C 5S7


**TEACHING:**

*Department of Geography*

GEO 3300 (3) ADVANCED CONSERVATION I

A study of environmental conservation with emphasis on air and water pollution.

GEO 3340 (3) TECHNIQUES OF URBAN AND REGIONAL ANALYSIS

Introduction to some of the more common types of analysis of urban and regional systems. The techniques are chosen with a view to their utility in EIA/SIA.

*Faculty of Engineering and Applied Science*

ENG 5132 ( ) ENVIRONMENTAL CONSERVATION AND MANAGEMENT

An analysis of local ecosystems, with emphasis on the description, measurement and management of the abiotic and biotic factors critical to conservation, sustained use and enjoyment of our natural resources and environment.

ENG 5141 ( ) ECONOMIC AND SOCIAL IMPACT OF MAJOR PROJECTS

The course will include general methods of assessing the impact of major projects and the problems associated with the identification and valuation of costs and benefits. While the emphasis will be on the economic costs and benefits, social implications will be considered. A number of specific projects will be studied in greater detail.

ENG 6101 ( ) ASSESSMENT OF TECHNOLOGY

Group seminars, each group evaluating the role of engineering technology in society, focusing on the sociological and environmental effects of major projects or developments in Newfoundland.

*Department of Anthropology*

ANT 3324 (3) ENERGY POLICY IN ITS SOCIO-ECONOMIC CONTEXT

This course examines the socio-economic implications of major energy related policy, both locally and internationally. Special attention is given to energy policies which have direct significance for Newfoundland and Canada, e.g., large scale hydroelectric technology, the role of nuclear energy, and the impact of major oil and gas development. The course is organized as a seminar with a strong emphasis on student participation. Readings are taken from a variety of authors including Commoner, Brooks, Georgescu-Roegen, Odum, Henderson, Berger, Rapaport and Lovins. Instructor: G. Stiles.

**RESEARCH:**

Christian, A.J. OCEAN ENGINEERING GROUP

Impact of offshore oil and gas on the Newfoundland construction industry.

Dempster, R.T. OCEAN ENGINEERING GROUP

Economic consequences of oil and gas development in Newfoundland.

Draper, D.L. GEOGRAPHY

Consultant to private and public sectors; assessment of potential project impacts; design of EIA/SIA studies; project evaluation.

Hartman, G. POLITICAL SCIENCE

Social impact assessment of offshore oil development; modelling of impact; baseline development for Hibernia.

House, D. SOCIOLOGY

Impact of offshore oil development.

Scarlett, M. GEOGRAPHY

Consultant to the private and public sectors; project impact evaluation; impact assessment; public information; design of EIA programs.

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| Steele, D.H. | BIOLOGY<br>Predevelopment environmental studies; question of impact prediction. |
| Storey, K. | GEOGRAPHY<br>Consultant to private and public sectors; design of a program of impact monitoring and measurement procedures; program evaluation analyst; public participation in resource development assessment. |
| Thompson, J.V. | SCHOOL OF SOCIAL WORK<br>Impact of energy development projects on social services. |
| White, R. | GEOGRAPHY<br>Consultant to private sector on environmental assessment; economic impact of petroleum development. |

**PROGRAM ACTIVITIES:**

A. 1) *Department of Geography*

A major focus of the teaching and research undertaken by the Department of Geography is Conservation of Resources. Environmental assessment is therefore examined as it relates to the efficiency of resource use. Associated with this, are land-use planning questions, with a particular interest of many department members being offshore development and its related impacts.

2) *Faculty of Engineering and Applied Science*

A study of the social, environmental and economic aspects of engineering serves as a basis for teaching and research in EIA/SIA. Particularly active is the Ocean Engineering Group with its focus on offshore development.

3) *Labrador Institute of Northern Studies*

The purpose of the Institute is to stimulate, co-ordinate and support major university projects or programs designed to promote the well-being of Labrador and enhance our knowledge of Labrador: recently, the Institute has been involved in studies relating to resource harvesting and settlement, sea ice navigation and initial social and economic assessment of the Labrador coast.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

1) Extension Department produced video tapes to be used to introduce communities to the federal environmental assessment and review process.

2) "Public Participation in Resource Development Assessment," Memorial University Extension Service, 1980.

3) "Oil and Gas: Are We Ready?," Memorial University Extension Service, 1979.

4) "Safety Management for Offshore," Continuing Engineering Education Centre, June, 1982.

5) "Iceberg Management in Offshore Exploration, Production and Transportation," Continuing Engineering Education Centre, November, 1982.

6) Workshops on topics related to social assessment, Ship Inn, evenings.

7) Labrador Institute for Northern Studies organizes in Labrador, workshops, conferences and seminars on topics associated with EIA/SIA. Recently, a conference was held on the future development of Labrador.

**ACTIVITÉS:**

A. 1) *Department of Geography*

L'un des principaux sujets sur lesquels portent l'enseignement et la recherche dans ce département est la conservation des ressources. On y étudie donc l'évaluation environnementale du point de vue de l'efficacité de l'utilisation des ressources et les questions connexes de la planification de l'utilisation des terres. Plusieurs membres du département portent un intérêt particulier à la mise en valeur des ressources au large des côtes et aux effets qui en découlent.

2) *Faculty of Engineering and Applied Science*

L'enseignement et la recherche dans le domaine de l'EIES sont fondés sur l'étude de l'aspect social, écologique et économique du génie. Le groupe du génie de la mer, qui étudie surtout l'exploitation des ressources au large des côtes, est particulièrement actif.

3) *Labrador Institute of Northern Studies*

L'institut est destiné à stimuler, coordonner et assister les projets universitaires importants organisés en vue de promouvoir le bien-être au Labrador et d'améliorer notre connaissance de cette région; récemment, l'institut a participé à des études concernant les établissements humains et l'exploitation des ressources, la navigation dans les glaces en mer, et l'évaluation initiale sociale et économique de la côte du Labrador.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

1) Le département de l'éducation permanente (Extension Department) produit des bandes magnétoscopiques des-

tinées à faire connaître aux collectivités le processus fédéral d'examen des évaluations environnementales.

2) «Public Participation in Resource Development Assessment». Memorial University Extension Service, 1979.

3) «Oil and Gas: Are We Ready?» Memorial University Extension Service, 1979.

4) «Safety Management for Offshore». Continuing Engineering Education Center, June, 1982.

5) «Iceberg Management in Offshore Exploration, Production and Transportation». Continuing Engineering Education Center, November, 1982.

6) Ateliers sur des sujets se rapportant à l'évaluation sociale, tenus le soir au Ship Inn.

7) Labrador Institute of Northern Studies: l'institut organise au Labrador des ateliers des conférences et des séminaires dont les sujets sont associés aux EIES. Récemment une conférence a eu lieu au sujet du développement futur du Labrador.

# UNIVERSITÉ DE MONTRÉAL

Location/Endroit: Montréal, Québec

Mailing Address/ Adresse: Université de Montréal
C.P. 6128, Succursale A
Montréal, Québec

**COURS:**

*Département de géographie*

GEO 23333 PRATIQUE DE TERRAIN EN BIOGÉOGRAPHIE

Étude d'un transect biogéographique, l'accent étant mis sur les groupements végétaux et leur signification écologique (incidences biotiques, climatiques, géomorphologiques et impacts sur l'aménagement. Coordinateur: P. Richard.

GEO 3003 GÉOGRAPHIE ET ENVIRONNEMENT

Dimension sociale, biophysique et politique de l'environnement. Mutations du paysage (érosion anthropique), affectations de l'environnement (grands projets d'aménagement): évaluation et analyse. Nature des études d'impact sur l'environnement. Coordinateur: G. Boileau.

GEO 3573 GÉOGRAPHIE ET AMÉNAGEMENT DU TERRITOIRE

Brève histoire de l'idée d'intervention territoriale. Les grands principes, les concepts et les méthodes; l'évolution des politiques et des cadres de l'intervention au Québec. Analyse critique des outils; plans directeurs, schémas d'aménagement. L'application des plans et schémas: le processus de décision. Coordinateur: G. Boileau.

GEO 6115 (G) SÉMINAIRE DE CLIMATOLOGIE DYNAMIQUE

Le problème des pluies et de l'amiante dans l'air: Diffusion atmosphérique et impacts environnementaux. Coordinateur: B. Singh.

*Institut d'urbanisme*

URB-2160 (2) PROTECTION ET GESTION PUBLIQUE DE L'ENVIRONNEMENT

Étude de quatre nouveaux domaines d'intervention publique étroitement liés à l'aménagement: la protection de l'environnement, les espaces naturels, les sites et arrondissements historiques et naturels, la protection du territoire agricole. Organisation administrative aux divers échelons gouvernementaux; mécanismes de protection et d'intervention; modalités effectives de mise en œuvre. Examen comparatif et critique des modes adoptés et appliqués dans les quatre domaines d'études. Coordinateur: M. Trépanier.

URB-6144 (G) ENVIRONNEMENT ET CADRE DE VIE

A partir de dossiers actuels ce laboratoire ouvre l'analyse à la fois vers le processus de planification écologique et vers les études du bien-être, du cadre et de la qualité de la vie comme un des paramètres de l'intervention et de la conception en aménagement. Coordinateur: M. Gariépy

URB-6437 (G) URBANISATION ET ENVIRONNEMENT

L'émergence du paradigme environnemental. Ses résonnances épistémologiques, méthodologiques et sociales. Impact des pratiques d'urbanisme sur le champ des problèmes environnementaux: procédés d'intervention; responsabilité des acteurs; rôle des acteurs publics et privés, moyens de concertation. Nouvelles composantes du processus et du dossier d'urbanisme. Coordinateur: O. Soubeyran.

URB-6348 (G) INDICATION ET ÉVALUATION ENVIRONNEMENTALE

Position de l'indication et de l'évaluation environnementale dans le processus de la planification et impact sur la décision. Problématiques et instruments de gestion des ressources, d'évaluation des poten-

tiels et d'évaluation des impacts. Méthodologie des études d'impact. Orientation et méthode des indications de la qualité du cadre de vie. Coordinateur: M. Gariépy.

URB-6349 (G) SÉMINAIRE SUR LA QUESTION ENVIRONNEMENTALE ET LA PRATIQUE DE L'URBANISME

Les conditions nouvelles de la pratique de l'urbanisme à l'occasion de l'extension de la question environnementale: nouvelles connaissances, nouveaux paradigmes de l'action; dimensions sociales nouvelles des conditions d'équité et de justice; processus de planification écologique; champ de la politique environnementale et positionnement de l'urbanisme dans ce champ; méthodes et techniques d'intervention du nouvel urbanisme dans le contexte de la question environnementale. Coordinateur: R. Parenteau.

*Département de sociologie*

SOL 6730 3 (G) ANALYSE DES MICRO-SYSTÈMES SOCIAUX

A l'aide d'une méthode de réflexion systématique, étudier l'équilibre d'un micro-système et sa relation à l'environnement. En appliquant des règles systémiques, étudier l'intervention de l'homme sur ce milieu. A partir des plans d'une vallée, élaborer des modèles alternatifs de village qui posent tous les problèmes de la relation à l'espace et de la formation de nouvelles solidarités axées sur l'articulation des projets individuels; définition des besoins de survie en regard des ressources disponibles, production et distribution de l'énergie locale; inventaire des modes alternatifs de division du travail, des rythmes de vie et de la pulsion ville-campagne. Étude des lois qui définissent l'usage du sol (Loi 90) et des nouvelles formes de propriété collective. Coordinateur: C. Carisse.

SOL 3320 (3) SOCIOLOGIE DE L'ENVIRONNEMENT

La sociologie de l'environnement est une nouvelle branche de la sociologie. Elle se partage entre l'analyse du mouvement écologique et spécialement du mouvement anti-nucléaire d'une part, et un débordement inter-disciplinaire dans un nouveau paradigme sociologique qui tient compte des fondements biophysiques de la société.

L'accent sera mis dans le cours sur: 1) l'écologie humaine et sociale, et la sociologie de l'environnement comme disciplines scientifiques; 2) la crise écologique, ses causes et ses manifestations; 3) la question de l'énergie, spécialement des économies d'énergie et du solaire, du nucléaire et des énergies fossiles; 4) le mouvement écologique. J.-G. Vaillancourt.

*Département d'anthropologie*

ANT 2030 (2) ÉCOLOGIE CULTURELLE

Étude du rôle de l'anthropologie dans la discussion des grands problèmes écologiques de l'heure. Participation des étudiants à des travaux. Coordinateur: L. Vallée.

**RECHERCHE:**

Benoit, A. INSTITUT D'URBANISME

Étudiante à la maîtrise en urbanisme. Impact sur le camp urbain du processus d'enquête et d'audience publique sur l'environnement au Québec.

Boisvert, A. INSTITUT D'URBANISME

Étudiant à la maîtrise en urbanisme. Travail de fins d'études sur l'inscription des impacts sociaux et des impacts urbains dans l'évaluation environnementale.

Gariépy, M. INSTITUT D'URBANISME

Évaluations environnementales; spécialisé en planification environnementale.

Gauthier, E. INSTITUT D'URBANISME

Étudiante à la maîtrise en urbanisme. Préparation d'un mémoire sur le cadre législatif et normatif de la planification environnementale.

Lavoie, S. INSTITUT D'URBANISME

Étudiant à la maîtrise en urbanisme. Préparation d'un mémoire sur les perspectives développementales de la planification environnementale.

Ouellet, B. INSTITUT D'URBANISME

Étudiant à la maîtrise en urbanisme. Recherche de fins d'études sur

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| | l'inscription politique de la question environnementale dans l'administration québécoise. |
| Parenteau, R. | INSTITUT D'URBANISME<br><br>Spécialisé en sociologie de l'environnement; une subvention de recherche de l'OTAN (Comité des défis des sociétés modernes), pour étudier les rapports entre les politiques environnementales et les politiques d'aménagement. |
| Singh, B. | GÉOGRAPHIE<br><br>La pluie acide et son impact environnemental. |
| Tartas, R. | INSTITUT D'URBANISME<br><br>Étudiant à la maîtrise en urbanisme. Travail de fins d'études sur la position des groupes revendicatifs dans la procédure de planification environnementale. |
| Trépanier, M-O. | INSTITUT D'URBANISME<br><br>Spécialisé en droit de l'environnement. |

**ACTIVITÉS:**

A. 1) *Département de géographie*

Le département vise à donner à ses étudiants une connaissance solide des bases de la science géographique (organisation de l'espace, analyse spatiale) et ainsi à former des géographes aptes à l'enseignement, au travail de la fonction publique, aux activités de l'entreprise privée ou à la recherche fondamentale. Les programmes ont été entièrement refondus, permettant une meilleure adéquation de la formation proposée aux besoins actuels de la société.

2) *Institut d'urbanisme*

La recherche et l'enseignement dans le domaine de l'EIES se font sous l'angle de l'aménagement et de la planification de l'environnement. On porte un interêt particulier aux méthodes employées pour déterminer les incidences des projets d'exploitation.

3) *Département de Sociologie*

Le programme offert se rapporte directement aux incidences sociales des grands projets d'exploitation. L'étude de la sociologie de l'environnement revêt une importance particulière.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?

Ni l'un ni l'autre. Cependant, comme d'autres, cette institution, possède les ressources et la compétence nécessaires pour permettre d'étudier ce domaine.

L'Institut d'urbanisme, lors de la modification du programme de maîtrise en urbanisme, a indiqué quatre voies de spécialisation du programme. Ces quatre voies de spécialisation structurent les activités des étudiants. L'une de ces voies est intitulée «Environnement et cadre de vie.»

C. Activités se rapportant à l'EIES: Aucune.

**PROGRAM ACTIVITIES:**

A. 1) *Département de géographie*

The Department tries to give its students a sound basic knowledge of geography (organization of space, spatial analysis) and to train geographers who can work in education, the public service, private industry or basic research. The programs have been completely redesigned, making the proposed training more apt to meet society's current needs, including the field of EIA.

2) *Institut d'urbanisme*

The research and teaching of EIA/SIA topics are approached as they relate to the management and planning of the environment. The methodologies used in determining the impact of development projects are a particular focus.

3) *Département de Sociologie*

The program that is offered directly relates to the social impacts caused by major development projects. Of particular note is the study of the sociology of the environment.

B. EIA/SIA Core Program or Streaming?:

No, however, as in other institutions the facilities and expertise are available to allow one to pursue study in this area.

L'institut d'urbanisme lors a la modification du programme de maîtrise en urbanisme a indiqué quatre voies de spécialisation du programme. Ces quatre voies de spécialisation structurent les activities des étudiants. L'une de ces voies est intitulée «Environnement et cadre de vie.»

C. Activities Related to EIA/SIA: None indicated.

# NOVA SCOTIA COLLEGE OF ART AND DESIGN

Location/Endroit: Halifax, Nova Scotia

Mailing Address/
Adresse: Nova Scotia College of Art & Design
5163 Duke Street
Halifax, Nova Scotia
B3J 3J6

**TEACHING:**

*Department of Environmental Planning*

SOCIAL PLANNING — INTERMEDIATE

One section of the course deals exclusively with EIA. Instructor: J. Grant.

ENVIRONMENTAL PLANNING III — STUDIO — INTERMEDIATE

Community Planning Methods — specific projects may involve SIA or elements of it, i.e., the 1982 project involved impact assessment of the proposed Venture gas development and its effects on the labor force of the Eastern Shore region of Nova Scotia. Instructor: J. Grant.

LAND USE PLANNING — ADVANCED

One section of the couse deals with EIA methodology using a survey format and case studies. Emphasis is on the regional and site-specific scale and relates principally to EIA of proposed development projects. Instructor: G.R. Parker.

ENVIRONMENTAL ISSUES — INTERMEDIATE

One section deals specifically with EARP, using case studies, i.e., Fundy Tidal Power and Mackenzie Valley Pipeline projects. The course also examines the American process. Instructor: M. Simmons.

AVANCED PLANNING THEORY — ADVANCED

Deals to some degree with the theoretical background to EIA work in Canada through case studies. Instructor: W. Smith.

**RESEARCH:**

Grant, J. ENVIRONMENTAL PLANNING

Social feasibility studies of development projects in West New Britain, Papua New Guinea.

**PROGRAM ACTIVITIES:**

A. *Environmental Planning Department*

Offers courses and promotes research on EIA/SIA from the planning perspective.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

**ACTIVITÉS:**

A. *Environmental Planning Department*

Le département offre des cours et encourage la recherche sur l'EIES du point de vue de la planification.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

# UNIVERSITY OF OTTAWA/UNIVERSITÉ D'OTTAWA

Location/Endroit: Ottawa, Ontario

Mailing Address/ adresse: University of Ottawa/ Université d'Ottawa Ottawa, Ontario K1N 6N5

## TEACHING/COURS:

*Civil Engineering/génie civil*

CVG 2130 (2) INTRODUCTION TO ENVIRONMENTAL ENGINEERING

Environmental resources and their role with emphasis on water pollution control and effects on ecology systems. Instructor: R.L. Droste, E.J. Schiller.

CVG 5132 (G) WASTE DISPOSAL ON LAND

Operation, site selection and environmental impact studies of land fills.

CVG 5139 (G) ENVIRONMENTAL ASSESSMENT OF CIVIL ENGINEERING PROJECTS

Environmental assessment review — methodology and Canadian case studies. Instructor: P. Wisner.

*Geography/Géographie*

GEG 1200 (1) MAN AND HIS ENVIRONMENT

The interdependence of man and environment in the world ecosystem. Man's impact on the environment — destruction or conservation. Instructor: P.G. Johnson, R. Wesche.

GEG 1600 (1) L'HOMME ET SON MILIEU

Les liens d'interdépendence entre l'homme et son environnement. L'influence de l'homme sur le milieu physique, conservation et destruction. Instructor: D. Lagarec, M. Phipps.

GEG 3108 (3) REGIONAL AND URBAN SYSTEMS

The course focuses on theories and processes of urban and regional development emphasizing spatial evolution, structure and operation and reviewing the attempts by various countries at system regulation and intervention. Instructor: D. Tate.

GEG 3302 (3) RESOURCE MANAGEMENT: AN ECONOMIC APPROACH

The concept of scarcity applied to resource management. Various resources particularly water resources are considered. Common property, public goods, market failure and political decision-making are analysed. Examination of specific cases under conflict and competition situations. Instructor: R. Needham.

GEG 3713 (3) ATELIER DE GÉOGRAPHIE APPLIQUÉE

Problématiques de l'application de concepts et méthodes géographiques dans le cadre de projets concrets d'aménagements urbains ou ruraux. Instructor: A. Langlois, E. Kayser, V. Berdoulay.

GEG 5001 (G) SEMINAR: EARTH SCIENCES SÉMINAIRE: SCIENCES DE LA TERRE

Instructor: Staff.

GEG 5003 (G) SEMINAR: RESOURCES MANAGEMENT SÉMINAIRE: GESTION DES RESSOURCES

Instructor: Staff.

## RESEARCH/RECHERCHE:

Alvo, M. MATHEMATICS/MATHÉMATIQUE

Mathematical methods for trend analysis; mathematical modelling for the assessment of environmental changes; development of sampling schemes for baseline data collection.

French, H. GEOGRAPHY/GÉOGRAPHIE

Environmental assessment and development in northern regions.

Gagnon, H. GEOGRAPHY/GÉOGRAPHIE

Utilisation et aménagement des sols; contrôle aérien de l'environnement.

Good, D.R. FACULTY OF LAW/FACULTÉ DE DROIT

(see citation – Carleton University)

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|---|---|
| Logan, B. | PHYSICS/PHYSIQUE<br>Assessment of nuclear radiation hazards. |
| Needham, R. | GEOGRAPHY/GÉOGRAPHIE<br>Research into EIA, including media coverage and public participation. |
| Philogene, B. | BIOLOGY/BIOLOGIE<br>Environmental impact of pesticides, oil; principal consultantant to Télé-Université on pesticides. |
| Wisner, P. | CIVIL ENGINEERING/GÉNIE CIVIL<br>Environmental impact of energy projects; environmental studies for the nuclear generating station at Point Lepreau, Wreck Cove hydro-power development. |

**PROGRAM ACTIVITIES:**

A. 1) *Civil Engineering/Génie civil*

Environmental Assessment is considered primarily in work that is undertaken under "Environmental Engineering". Topics related to water resources development and waste management are a major focus of this work.

2) *Geography/Géographie*

Programs in graduate and undergraduate teaching and research address various aspects of EIA/SIA. The department has particular strength in northern studies and resources planning.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA. None indicated.

**ACTIVITÉS:**

A. 1) *Génie civil*

C'est surtout au cours des travaux en «Génie de l'environnement» qu'il est question d'évaluation environnementale. Ces travaux portent en particulier sur l'exploitation des ressources en eau et la gestion des déchets.

2) *Géographie*

Les programmes pour les étudiants diplômés et non diplômés, dans le domaine de l'enseignement et de la recherche, portent sur divers aspects de l'EIES. Le département est particulièrement qualifié en études nordiques et en planification des ressources.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

# UNIVERSITÉ DU QUÉBEC
# INSTITUT NATIONAL DE LA RECHERCHE SCIENTIFIQUE — EAU


Location/Endroit: Sainte-Foy (Québec)

Mailing Address/ Adresse: Institut national de la recherche scientifique
Complexe scientifique
2700, rue Einstein
CP 7500
Sainte-Foy, Québec
G1V 4C7


* refer to program activities.

**RECHERCHE:**

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|---|---|
| Breton, G. | Approche systémique à la gestion: théories, méthodes et cas. |
| Comtois, Y. | Analyse et évaluation d'une action. Cas pratique: Projet d'extension du port de Québec sur les battures de Beauport. |
| Couillard, D. | Méthodes d'évaluation des impacts; d'évaluation des techniques pour l'évaluation d'impact d'un type de projet donné; analyse de systèmes appliquée aux problèmes de l'eau. |
| Delisle, A. | Les citoyens et l'évaluation de la qualité des actions humaines; l'évaluation des répercussions environnementales, une approche systémique au contrôle de la qualité des actions humaines. |
| Descôteaux, Y. | Les citoyens et l'évaluation de la qualité des actions humaines; l'évaluation des répercussions environnementales, une approche systémique au contrôle de la qualité des actions humaines. |
| Leclerc, M. | Vers une nouvelle génération de méthodogies d'évaluation des répercussions environnementales. |
| Potvin, L. | Analyse et évaluation d'une action. Cas practique: Projet d'extension du port de Québec sur les battures de Beauport. |
| Sasseville, J.L. | Approche systémique à la gestion: théories, méthodes et cas; l'évaluation des répercussions environnementales, une approche systémique au contrôle de la qualité des actions humaines. |

**ACTIVITÉS:**

A. *Université du Québec*
*Institut national de la recherche scientifique*

L'Institut fait surtout fonction de centre de recherches environnementales dans la province de Québec. Toutefois, son personnel est ordinairement en contact direct avec les universités du Québec, travaille en étroite collaboration avec les chercheurs universitaires et enseigne fréquemment dans diverses institutions.

**PROGRAM ACTIVITIES:**

A. *Université du Québec*
*Institut National de la Recherche Scientifique*

The Institute acts primarily as an environmental research centre in the Province of Québec. Members, however, usually have close application with Québec universities and work closely with university research personnel, and frequently have cross-institutional teaching appointments.

# QUEEN'S UNIVERSITY AT KINGSTON

Location/Endroit: Kingston, Ontario

Mailing Address/ Adresse: Queen's University
Kingston, Ontario
K7L 3N6

## TEACHING:

*School of Urban and Regional Planning*

SURP 817 (G) ENVIRONMENTAL PLANNING LAW AND ADMINISTRATION

The course examines some of the policy issues related to planning the environment and the legal processes by which competing demands upon the environment are resolved and environmental objectives are realized. The preparation of environmental impact statements and other methods of environmental regulation will be considered. Instructor: R.W. Mackenzie.

SURP 824 (G) ECOLOGICAL CONCEPTS AND PRINCIPLES FOR PLANNERS

Analysis of basic ecological principles describing environmental dynamics. Identification of the spectrum of effects man's activities will have on the environment. Ecosystems approach to managing environmental systems. Application of ecological principles and concepts to development of methods for environmental planning. Instructor: W.C. Wilson.

SURP 832 (G) REGIONAL ENVIRONMENTAL PLANNING AND MANAGEMENT

Organization of man-environment relationships into issue areas and concerns from the viewpoint of public policy. Indentification of the roles and activities undertaken by the environmental planner. Analysis of environmental planning processes and their application in the preparation of an environmental impact statement. Investigation of the functions of administrative organizations and the degree of commitment of policy priorities given to environmental problems. Instructor: P. Neice.

*Department of Civil Engineering*

CIVL 282 (2) ENVIRONMENTAL ENGINEERING 2

Instructor: J. Boadway.

*Department of Geography*

38.306 (3) ARCTIC ENVIRONMENTS

Topics will include history of northern development, terrain sensitivity, marine environments, problems of transportation, and construction, ecological responses, special problems of pollution, and management of northern resources. Instructor: R. Gilbert.

*Department of Biology*

12.300 (3) GENERAL BIOLOGY

Students are exposed to EIA through terms that would be useful to them in future work and which would allow them to become better citizens. The chief aim of the course is to integrate ecological knowledge with knowledge of legal and regulatory processes.

*School of Public Administration*

86.886 (G) EVALUATION OF PUBLIC PROGRAMS

Addresses the subjects of environmental and social impact assessment. Instructor: E. Moore.

## RESEARCH:

Crowder, A. BIOLOGY

Public perception and carrying capacity; preparing a manual for screening regular parks' actions to determine which need environmental review.

Gilbert, R. GEOGRAPHY

Research for Petro-Canada on littoral environments of the coast of Cumberland Peninsula (Baffin Island); environmental studies.

Graham, K. INSTITUTE OF LOCAL GOVERNMENT

Evaluation of funding for public participation; oil and gas development in the Beaufort Sea; relationship between development companies and senior levels of government with local governments in central and eastern Arctic.

Moore, E. GEOGRAPHY

Evaluation of funding for public participation.

**PROGRAM ACTIVITIES:**

A. 1) *School of Urban and Regional Planning*

The School is oriented to the field of regional planning and development. Current research is occupied with such topics as revitalization of small towns, urban land markets, techniques of environmental impact assessment, patterns of northern towns, and policy analysis techniques.

2) *Department of Geography*

EIA is considered primarily as it relates to physical earth processes, particularly in the context of northern Canada.

3) *Institute of Local Government*

The Institute of Local Government and the Centre for Resources Studies at Queen's University have been involved in a major research study, the Eastern Arctic Study. This study has examined the relationship between resource development companies and senior levels of government with local governments in the central and eastern Arctic. The issue of EIA/SIA emerged as prominent in many of the case studies examined on specific mine developments and/or exploration activities.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

Both the School of Urban and Regional Planning and the Institute of Local Government have been involved in seminars and workshops on topics related to EIA/SIA.

**ACTIVITÉS:**

A. 1) *School of Urban and Regional Planning*

L'école est orientée vers le domaine de la planification et du développement au niveau régional. Les travaux de recherche actuels portent sur des sujets comme la revitalisation des petites villes, le marché des terres urbaines, les diverses techniques d'évaluation des incidences environnementales pour les villes des territoires nordiques et les méthodes d'analyse des politiques.

2) *Department of Geography*

le département étudie l'EIE surtout en rapport avec les processus physiques et terrestres, en particulier dans le Nord canadien.

3) *Institute of Local Government*

l'Institut d'administration locale et le Centre d'études des ressources, de l'université Queen's, ont participé à un important projet de recherche, l'Étude de l'Est de l'Arctique. Au cours de cette étude, on a étudié le rapport entre, d'une part, les compagnies d'exploitation des ressources et les paliers supérieurs de gouvernement et, d'autre part, les administrations locales dans le Centre et dans l'Est de l'Arctique. La question de l'EIES est apparue comme un point très important dans un grand nombre de cas d'exploitation minière ou d'activités d'exploration étudiés.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des études diants en ce domaine?: Aucune mentionnée.

C. Activités se rapportant à l'EIES:

L'école de planification urbaine et régionale (School of Urban and Regional Planning) et l'institut d'administration locale (Institute of Local Government) ont tous deux participé à l'organisation de séminaires et d'ateliers sur des sujets se rapportant à l'EIES.

# THE UNIVERSITY OF REGINA

Location/Endroit: Regina, Saskatchewan

Mailing Address/ Adresse: The University of Regina
Regina, Saskatchewan
S4S 0A2

## TEACHING:

*Faculty of Engineering*

ENGIN 320 (3) INDUSTRIAL IMPACT AND REGULATION

A study of the various impacts of industrial facilities, including air and water pollution, solid wastes and noise. The regulation of industrial impacts is discussed. Instructor: F. Curtis.

ENGIN 421 (4) ENVIRONMENTAL DESIGN AND IMPACT

Legal and administrative considerations for environmental assessment and methods for preparing an environmental impact statement. Canadian and international ap- proaches are compared. Instructor: F. Curtis.

## RESEARCH:

Curtis, F. FACULTY OF ENGINEERING

Consultant; design of impact assessment procedures; research into EIA methods.

Harding, J. SCHOOL OF HUMAN JUSTICE

SIA research in northern Saskatchewan, funded by the Saskatchewan Health Research Board; social impacts of economic developments; social impacts on indigenous northern communities of economic development; alchohol and drug problems.

## PROGRAM ACTIVITIES:

A. 1) *School of Human Justice*

Research undertaken by the School stresses social impact assessment issues as one of the main priorities. In particular, study focuses on the interaction between indigenous people and EIA/SIA.

2) *Faculty of Engineering*

EIA is approached from the perspective of the design and impact of public projects and industrial facilities. The courses which are offered are at the undergraduate level.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

Of particular note are the activities of the *Canplains Research Centre*. The Centre provides a depository for research and teaching activities concerning Canadian Plains. The Centre sponsors research projects, seminars, lectures and workshops, and is the base for the Canplains Database.

The Canplains Database contains over 13,000 records of research. Its capabilities include:

a) lists of researchers working in specific subject areas;

b) directories of research on specific topics;

c) lists of funded research, and

d) a general overview of research which has been completed.

The Centre also published a newsletter, "The Canadian Plains Bulletin" which promotes a research network.

## ACTIVITÉS:

A. 1) *School of Human Justice*

les recherches entreprises à l'école font ressortir l'aspect prioritaire de l'évaluation des incidences sociales. On étudie en particulier l'interaction entre les autochtones et l'EIES.

2) *Faculty of Engineering*

On y étudie l'EIE du point de vue de la conception et des incidences des projets publics et des installations industrielles. Les cours sont donnés à l'intention des étudiants non diplômés.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

Les activités du *Research Center Canplains* sont à souligner. Le centre s'occupe des activités de recherche et d'enseignement qui ont trait aux plaines du Canada. Il commandite des projets de recherche, des séminaires, des conférences et des ateliers, et il exploite la base de données Canplains (Canplains Database). Cette base contient plus de 13 000 enregistrements qui se rapportent à la recherche, dont:

a) des listes de chercheurs qui travaillent dans des domaines particuliers;

b) des répertoires de travaux de recherche sur des sujets particuliers;

c) des listes de travaux de recherche subventionnés, et

d) un aperçu général des travaux de recherche qui ont été terminés.

Le Centre publie aussi un bulletin intitulé «The Canadian Plains Bulletin» qui favorise l'établissement d'un réseau de recherche.

# RYERSON POLYTECHNICAL INSTITUTE

Location/Endroit: Toronto, Ontario

Mailing Address/ Adresse: Ryerson Polytechnical Institute
50 Gould Street
Toronto, Ontario
M5B 1E8

**TEACHING:**

*Department of Applied Geography*

GEO 506 (3) RECREATIONAL STUDIES I

This course provides a broad understand ing of the spatial behavior of recreationists including the analysis of methodologies suitable for the assessment of the various impacts of this behavior. Instructor: P. Williams.

GEO 604 (3) RESOURCE AND ENVIRONMENTAL LEGISLATION AND DECISON-MAKING

The major theme developed in the course involves the analysis of complex resource and environmental problems. In many cases such problems involve the consideration of a wide variety of data and of a number of objectives. General methods of dealing with such situations are presented and a detailed review of environmental impact assessment is undertaken. Instructor: M. Bardecki.

GEO 606 (3) RECREATIONAL STUDIES II

Instructor: P. Williams

GEO 702 (4) EXPLORATIONS IN ENVIRONMENTAL ISSUES

A senior elective course reviewing a wide range of environmental issues of general interest. Instructor: M. Bardecki.

GEO 709 (4) DEVELOPMENT AND ENVIRONMENTAL LAW

This course reviews the current form and practice of development and environmental law in Canada and Ontario. Emphasis is placed on land use control and the development process, on public welfare statutes for environmental protection, and on the role of administration boards.

*Department of Urban and Regional Planning*

URB 235 (2) PLANNING ANALYSIS II

In this continuation of URB 135, more techniques of information handling and evaluation will be covered. The emphasis will be on quantitative methods used in the design and choice of alternative planning strategies. Students will study, in detail, methods of optimization, simulation, and cost/benefit analysis, among other methods. Instructor: J. Mars.

URB 525 (4) REGIONAL IMPACT ANALYSIS

Instructor: J. Mars.

**RESEARCH:**

Bardecki, M. GEOGRAPHY

Environmental impacts of agricultural land drainage in southern Ontario.

Duerden, F. GEOGRAPHY

Land use; impacts of Indian land claims.

Williams, P. GEOGRAPHY

Economic and social impacts of ski area developments.

**PROGRAM ACTIVITIES:**

A. 1) *Department of Applied Geography*

The program of Environmental and Resources Management offered by the department emphasizes the study of management and planning policies that address conflicts arising as economic development severely reduces the physical resource base and strains the quality of the natural environment. Students must intern to gain practical experience. EIA is also studied as it relates to recreational resources development.

2) *Department of Urban and Regional Planning*

The program considers EIA, planning, and the importance of public involvement within this process.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

**ACTIVITÉS:**

A. 1) *Department of Applied Geography*

Le programme de gestion de l'environnement et des ressources offert met l'accent sur l'étude des politiques en matière de gestion et de planification se rapportant aux conflits qui naissent lorsque le développement économique réduit considérablement les ressources physiques et diminue la qualité de l'environnement naturel. Les étudiants doivent faire un stage pour acquérir une expérience pratique. On étudie aussi l'EIE dans le domaine de la mise en valeur des ressources qui servent aux loisirs.

2) *Department of Urban and Regional Planning*

Le programme traite de l'EIE du point de vue de la planification et de l'importance de l'engagement du public dans ce processus.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune.

# UNIVERSITY OF SASKATCHEWAN


Location/Endroit: Saskatoon, Saskatchewan

Mailing Address/ Adresse: The University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0


## TEACHING:

*Department of Geography*

GEOG 381.3 (3) GEOGRAPHY OF NORTHERN DEVELOPMENT

Instructor: B. Bone

GEOG 401 (4) LAND USE

The utilization of rural lands; land and population; geographical approach to regional analysis; land classification; determinants, including social attitudes in the use of land; rural-urban land relationships; conservation, planning and social controls. Instructor: H. Richards.

GEOG 847.3 (G) GEOGRAPHY OF NORTHERN DEVELOPMENT

Instructor: B. Bone.

*College of Law*

LAW 444.31 (4) ENVIRONMENTAL LAW

The course examines processes by which competing demands upon the environment are reconciled and environmental objectives realized. Existing legal techniques to combat environmental degradation will be examined, including common law remedies and various models of environmental legislation. A series of particular problems arising in the area of environmental control will be studied to assess the success of these existing mechanisms and proposals for new directions in the field will be considered. Instructor: M.A. Bowden.

*Department of Civil Engineering*

CE 456.2 (4) ENVIRONMENTAL CONTROL ENGINEERING

Quality changes occurring in the natural environment and those resulting from man's activities in developing water for domestic, industrial and irrigation use are outlined. Interbasin and international water transport schemes are detailed. The environmental changes associated with extraction of minerals and of power generation are developed. Environmental impact assessment procedures are studied in relation to the above activities. The engineering and environmental impact of future alternative energy sources are discussed as time and interest in specific topics allow. Instructor: E. Davis.

*Department of Crop Science and Plant Ecology*

PLEC 213.3 (2) PRINCIPLES OF ECOLOGY

Principles of ecology are examined in relation to man's use of ecosystems for food, fiber and shelter. Emphasis is placed on energy flow and cycling of materials in relation to productivity. EIA is introduced through the use of case studies examining such topics as the potash industry. Instructor: R.E. Redmann.

*Department of Sociology*

SOC 308 (3) COMMUNITY DEVELOPMENT IN CANADA

A sociological examination of community development concepts and approaches, relevant models, processes, contexts ideologies and attitudes, policies, and methods of evaluation will be undertaken. Consideration will also be given to the roles of the citizen, development agents, and selected target populations such as poverty groups and native peoples.

## RESEARCH:

Archibold, W. GEOGRAPHY

Environmental impact of heavy metals from uranium tailings.

Bone, R.M. GEOGRAPHY

Design, development and implementation of a database and monitoring system for the Norman Wells oil development and pipeline project for the Department of Indian Affairs and Northern Development.

| | |
|---|---|
| Bowden, M.A. | COLLEGE OF LAW |
| | Text/Workbook on Environmental Impact Assessment (with F. Curtis); environmental assessment legislation; environmental degradation; offshore rights and environmental assessment. |
| Redmann, R.E. | CROP SCIENCE AND PLANT ECOLOGY |
| | Environmental impact of mining in Canada; environmental impact of airborne salts; reviewing of EISes for Saskatchewan provincial government. |

**PROGRAM ACTIVITIES:**

A. 1) *College of Law*

Environmental and social assessment are examined as they relate to the regulation of pollution on resources development. Also of interest are public participation and the hearings process, and the various legislative and non-legislative procedures that are the underpinnings of EIA across the country.

2) *Department of Geography*

A major focus of the teaching and research in the department is land-use planning. It is in this light that EIA/SIA are primarily studied. Also, northern development problems are of interest to some faculty members.

3) *Department of Civil Engineering*

Environmental impact assessment is studied in relation to quality changes that occur in the natural environment as a result of man's activities.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA: None indicated.

**ACTIVITÉS:**

A. 1) *College of Law*

On y étudie l'évaluation des incidences environnementales et sociales du point de vue de la réglementation applicable à la pollution ou à l'exploitation des ressources. Comme autres sujets d'étude intéressants, il y a la participation du public et le processus des audiences ainsi que les diverses mesures législatives et autres qui sont le fondement de l'EIE au pays.

2) *Department of Geography*

La planification de l'utilisation des terres est l'un des principaux sujets d'enseignement et de recherche dans ce département, et c'est surtout sous cet aspect qu'on traite de l'EIES. En outre, certains membres du département s'intéressent aux problèmes de la mise en valeur du Nord.

3) *Department of Civil Engineering*

On étudie l'EIE en rapport avec les changements dans la qualité de l'environnement naturel résultant de l'industrie humaine.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES: Aucune mentionnée.

# UNIVERSITÉ DE SHERBROOKE

Location/Endroit: Sherbrooke, Québec

Mailing Address/ Adresse: Université de Sherbrooke
Sherbrooke, Québec
J1K 2R1

**COURS:**

*Département de Géographie*

GEO 406 ( ) IMPACT DE L'HOMME SUR SON MILIEU

Le cours est une initiation à la problématique de l'environnement et veut montrer les effets de l'action de l'homme sur le milieu. Comme le sujet est vaste et complese, l'approche utilisée consiste à donner d'abord une vue d'ensemble des impacts des diverses activités humaines sur le milieu et conséquemment sur les écosystémes pour ensuite compléter par l'etude d'un ou plusieurs cas.
Instructeur: A. Poulin.

GEO 408 ( ) AMÉNAGEMENT RÉGIONAL

Le cours est structuré pour donner une vision globale du domain de l'amenagement par des exposés, l'analyse de plans d'aménagement de divers secteurs et régions et des travaux pratiques qui s'insèrent dans l'aménagement regional tout en relevant des attributions du géographe puisse acquérir un niveau de connaissances dans les disciplines auxquelles l'aménagement régional fait appel pour être à même de communiquer efficacement avec les autres spécialistes de l'équipe d'aménagement. La préparation se fait avant tout en vue d'une activité pluridisciplinaire.
Instructeur: O. Stanek.

GEO 410 ( ) AMÉNAGEMENT URBAIN

Instructeur: O. Stanek.

GEO 410 ( ) UTILISATION DU SOL ET ENVIRONNEMENT

Il y a trois objectifs du cours: connaissance de l'utilisation du sol et de ses effets sur l'environnement; connaissance des méthodes de préparation des rapports d'impacts sur l'environnement; et intérgration du géographe dans un équipe interdisciplinaire. Instructeur: A. Poulin.

GEO 417 ( ) AMÉNAGEMENT RURAL

Instructeur: Robert Gagnon.

GEO 423 ( ) AMÉNAGEMENT TOURISTIQUE

Instructeur: Roger Nadeau

GEO 708 ( ) SÉMINAIRE DE RECHERCHE EN UTILISATION DU SOL ET EN ENVIRONNEMENT

Le séminaire de recherche en utilisation du sol porte sur quatre thèmes: l'éevaluation des impacts; l'éerosion des sols; aspects visuels et esthétique de l'utilisation du sol; la cartographie de l'environnement. Instructeur: A. Poulin.

GEO 711 ( ) AMÉNAGEMENT DES PETITES VILLES ET DU MILIEU RURAL

Chaque participant fera un travail d'équipe et un travail individuel sur un des sujets au choix.
Instructeur: O. Stanek.

*Département de Biologie*

ECL 300 ( ) ENVIRONNEMENT ET L'HOMME

Instructeur: R. Saucier.

PBI 720 ( ) BIOLOGIE DU MILIEU III

Discussion sur différents thèmes d'actualité et leur consequences sur l'environnement et l'homme. Des conférenciers sont invités pour présenter certain thèmes d'actualité.

*Département de Chimie*

CHM 904 ( ) CHIMIE DU MILIEU

Éléments de géochimie. Évolution chimique et origines de la vie. L'énergie. Impacts d'ordre chimique des processus. Chimie d'atmosphère. Pollution de l'air et correctifs. Purification de l'eau. Notions de toxicologie. Incidences toxicologiques de l'activité industrielle. Instructeur: G. Pelletier.

*Faculté des Sciences Appliquées*

SCA 761 ( ) SÉMINAIRES EN ENVIRONNEMENT

Ce cours a rendre l'étudiant capable d'évaluer les effets d'un projet sur

l'environnement et de rédiger des rapports d'impact sur l'environnement. Instructeur: J.P. Jones.

*Faculté de droit*

DRT 519 ( ) DROIT DE L'ENVIRONNEMENT

Historique du droit de l'environnement. Rôle des pouvoirs publics et des ministères. Loi qui régissent les divers organismes. Rôle des particuliers: Interventions, recours. Participation des citoyens à l'élaboration des normes régissant la qualité du milieu. Étude comparative de la législation canadienne avec celle de differents pays.
Instructeur: M. Poirier.

**RECHERCHE:**

*Centre de recherche en aménagement regional (CRAR)*

L'Institut d'Aménagement remplace le Centre qui existait depuis 1970. Les projets principaux du CRAR sont: Trans-Canada Pipelines: apérçu régional des régions de l'Estrie et des Bois-Francs (1979); Trans-Canada Pipelines: apérçu régional du Saguenay/Lac Saint-Jean (1979); Conseil régional de développement des Cantons de l'Est: la région administrative de l'Estrie et l'application de la loi 125 (1981).

Dubois, J.M. INSTITUT D'AMÉNAGEMENT

Utilisation des techniques de télédetection dans l'étude des dépôts meubles et des ressources en eau; geomorphologie, télédetection et aménagement hydroélectrique au Québec.

Nadeau, R. GÉOGRAPHIE

Impact économique et social d'une éventuelle implantation de casinos au Québec; le tourisme comme élément dynamique dans l'organisation de l'espace;

Poirier, M. DROIT

Vice-doyen à l'administration et à la recherche; membre du Conseil d'administration, Conseil québecois de l'environment; organisateur d'un colloque sur «Le droit québécois de l'aménagement du territoire».

Poulin, A. GÉOGRAPHIE

Les routes et l'environnement.

Saucier, R. BIOLOGIE

Commissaire d'urbanisme — zonage écologique; d'étude des impacts des moteurs hors-bord sur la rivière Magog.

Stanek, O. GÉOGRAPHIE

Étude de l'impact d'un centre commercial péri-urbain sur la fonction commerciale d'un centre-ville urbain: Shawinigan (avec Gagnon); Impact de la loi 90 sur les terrains résidentiels des villes de la rive sud de Montréal.

**ACTIVITÉS:**

A. 1) *Maîtrise en Environnement*

Le programme de maîtrise en environnement, offert par l'Université de Sherbrooke, vise à donner à des personnes de formation différente les outils nécessaires à la solution des problèmes reliés à l'environnement. De plus, ce programme leur fait connaître les aspects scientifiques, techniques et légaux de la protection du milieu de vie.

La contribution de différents spécialistes à l'étude des problèmes de l'environnement favorise la participation des étudiants tout en leur donnant une occasion privilégiée de discuter de leurs projets. L'étudiant acquiert aussi une expérience de recherche grâce à un stage effectué soit à l'Université, soit dans une industrie, soit encore au sein d'un organisme gouvernemental. Le stage porte essentiellement sur des problèmes d'intérêt pratique directement reliés à l'environnement. Le project est réalisé au sein d'une équipe multidisciplinaire (ingénieur, biologistes, etc.) dans un milieu de travail ou il fera éventuellement carrière.

2) *Département de Géographie*

Le département de géographie est une force majeure à l'université de Sherbrooke pour le travail relié à l'EIE. Le programme fournit aux étudiants les outils de travail nécessaires pour les domaines de l'EIE. Même s'il n'existe pas une spécialité, l'EIE est examiné à fond dans plusieurs cours.

3) *Institut d'Aménagement*

L'institut a à peine un an et il n'a pas encore de programme académique, bien que cela soit prévu dans ses statuts. Cet institut remplace le Centre de recherche en aménagement régional qui existait depuis 1970.

L'institut est en train de mettre sur pied un programme de cours intensifs destiné aux gestionnaires, ingénieurs, écologistes, environnementalistes, etc. sur la télédétection appliquée à l'environnement et à l'aménagement. Ce programme devrait commencer en février 1983 avec un premier cours d'introduction à la télédétection.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?

Non, mais le programme de maîtrise en environnement offre aux étudiants la possibilité de participer à un groupe interdisciplinaire d'étude pratique dont le résultat est la production d'une étude d'impact environnemental.

C. Activités se rapportant à l'EIES: Aucune mentionnée.

**PROGRAM ACTIVITIES:**

A. 1) *Maîtrise en Environnement*

The Masters of Environment program offered by the Université de Sherbrooke offers to students from various disciplines, the tools necessary to solve problems related to environmental issues. Furthermore this program informs the student of the scientific, technical and legal aspects of environmental protection.

The contribution of various specialists in environmental studies stimulates the participation of students, giving them the privilege of discussing their individual projects. The student also acquires research experience from this participation in a "hands-on" experience program with the university, private industry and government. This "hands-on" experience is directly related to environmental issues. The prcjet is performed within a multidisciplinary team (biologists, engineers, etc.) in a work area directly related to a chosen field.

2) *Département de Géographie*

The department is a major focus at the University of Sherbrooke for work related to EIA/SIA. The program format give students the tools with which to work in the EIA/SIA field and although no streaming exists *per se*, EIA is examined in detail in many courses.

3) *Institut d'Aménagement*

Although the Institute has been in existence for a year, it does not yet have an academic program. The statutes do however provide for this in the future. L'Institut d'aménagement replaces the Centre de recherche en aménagement régional which has been in existence since 1970.

The Institute is in the process of putting in place a program of intensive courses for engineers, ecologists, resource managers, and environmentalists etc., in the application of remote sensing techniques to environmental management. The program began in February, 1983 with an introductory course on remote sensing.

B. EIA/SIA Core Program or Streaming?:

No, however the Maîtrise en Environnement program allows students to participate in a practical interdisciplinary study team which results in the product of an environmental impact statement.

C. Activities Related to EIA/SIA: None indicated.

# SIMON FRASER UNIVERSITY

Location/Endroit: Burnaby, British Columbia

Mailing Address/ Adresse: Simon Fraser University
Burnaby, British Columbia
V5A 1S6

**TEACHING:**

*Natural Resources Management Program*

MRM 611-5 (G) POPULATION AND COMMUNITY ECOLOGY

A review of population, community, and ecosystem ecology; implications of these areas for methods of resource management and environmental assessment.

MRM 612-5 (G) MANAGEMENT MODELS OF BIOPHYSICAL RESOURCES

Methods of constructing simulation models and their uses in resource management and decision-making. Case studies of environmental modelling with emphasis on biological resources.

MRM 645-5 (G) RESOURCE DEVELOPMENT COMMUNITIES

Examination of the impact of resource development on communities in Canada. The course presents an overview of the social organization of resource-based communities and an analysis of the participatory process in decision-making in resource management.

MRM 646-5 (G) ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Evaluation and application of current methodologies for social, economic and biophysical impact assessment. Instructor: J.C. Day, M. Barker.

MRM 651-5 (G) PROJECT EVALUATION

The course examines the role, limitations, and methods of benefit-cost analysis. Different measurement techniques are applied to the estimation of a range of benefits and costs. Market and non-market allocations are considered. Instructor: J. Richards.

*Department of Geography*

GEOG 421 (4) GEOGRAPHY OF RESOURCE DEVELOPMENT

Geographical aspects of development and management of natural resources. The course focusses on decision-making and institutions frameworks, resource allocation technique (e.g., benefit-cost analysis), environmental and social impact assessment. Instructor: M. Baker, S. Wong.

GEOG 383 (3) REGIONAL PLANNING I

This course deals with the planning/decision-making process, including evaluation, as applied to problems of urban and regional planning.

GEOG 445 (4) RURAL PLANNING

This course addresses the problems of planning in rural areas which tend to be dominated by resource issues

GEOG 444 (4) REGIONAL PLANNING II

This course addresses real-life planning/development issues.

**RESEARCH:**

Barker, M. GEOGRAPHY/MRM PROGRAM

Energy policy analysis and regional resource planning; flood loss mitigation policies in British Columbia and Washington State.

Day, J.C. MRM PROGRAM

International river basin management; environmental regulation; coastal zone management; landslide hazards; social impact assessment.

Gunton, T. MRM PROGRAM

Regional development; impact evaluation of mega-projects; regional resource planning; mineral policy.

Peterman, R. MRM PROGRAM

Simulation modelling of various ecological systems.

Roberts, M.C.

MRM PROGRAM

Land suitability model for the evaluation of land-use change.

**PROGRAM ACTIVITIES:**

A. 1) *Department of Geography*

The topics of environmental and social impact assessment are addressed from the point of view of land use and land-use planning. Courses associated with EIA/SIA are offered at the undergraduate level.

2) *Natural Resources Management Program*

This is a professional program designed for individuals with experience in private organizations or public agencies dealing with resources, and for recent graduates in various disciplines related to natural resources management. All courses are scheduled in the evening from time to time to permit students to complete the program on a part-time basis. EIA/SIA are part of both teaching and research.

B. EIA/SIA Core Program or Streaming?:

No, although students may follow a line of study specializing in these areas.

C. Activities Related to EIA/SIA: None indicated.

**ACTIVITÉS:**

A. 1) *Department of Geography*

on y étudie l'EIES du point de vue de l'utilisation des terres et de la planification dans ce domaine. Des cours connexes sont offerts aux étudiants non diplômés.

2) *Natural Resources Management Program*

c'est un programme de niveau professionnel à l'intention des personnes qui ont acquis de l'expérience dans des organisations privées ou des organismes publics qui s'occupent des ressources ainsi que pour les récents diplômés dans diverses disciplines se rapportant à la gestion des ressources naturelles. Tous les cours sont donnés le soir de temps à autre pour permettre aux étudiants de suivre le programme à temps partiel. L'EIES est l'un des sujets d'enseignement et de recherche.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?:

Ni l'un ni l'autre, bien que les étudiants aient la possibilité de suivre des cours menant à une spécialisation dans ces domaines.

C. Activités se rapportant à l'EIES: Aucune.

# TECHNICAL UNIVERSITY OF NOVA SCOTIA


Location/Endroit: Halifax, Nova Scotia

Mailing Address/ Adresse: The Technical University of Nova Scotia
P.O. Box 1000
Halifax, Nova Scotia
B3J 2X4


## TEACHING:

*Department of Urban and Rural Planning*

| | | |
|---|---|---|
| 2530 | (G) | RURAL PLANNING |
| 2550 | (G) | ENVIRONMENTAL STUDIES<br>(offered at Dalhousie University) |
| 2552 | (G) | ENVIRONMENT AND TECHNOLOGY<br>(offered at Dalhousie University) |
| 2578 | (G) | NATURAL RESOURCES ADMINISTRATION IN CANADA<br>(offered at Dalhousie University) |
| 2588 | (G) | SOCIAL AND ECONOMIC IMPACT ASSESSMENT<br>Canada's economic, social and political evolution has been and is characterized by the development of natural resources. This class will introduce the student to the theoretical, legislative and methodological perspectives of socio-economic impact assessment as a planning tool. In particular, the course will draw upon an increasing body of literature relating to the impacts of resource development. Instructor: A.G. Wilkie. |
| 2589 | (G) | ENERGY AND PLANNING<br>The course will combine an examination of inclusion on energy-related factors in day-to-day planning practice with treatment of such special topics as: energy resource development in rural planning, energy accounting in environmental impact assessment and the role of energy in urbanization. Instructor: D. Procos. |

## RESEARCH:

| | |
|---|---|
| Procos, D. | URBAN AND RURAL PLANNING<br>Survey of impacts from fossil fuel extraction in the Mediterranean Basin; social and economic impact study for Mobil's (Venture Field) EIS.<br>CENTRE FOR WATER RESOURCES STUDIES<br>Halifax Urban Watersheds Program — program director: D. Waller, research program employs graduates and undergraduate students. |
| Walker, P. | URBAN AND REGIONAL PLANNING<br>Impacts of offshore activities upon harbour oriented land use (Master's research). |
| Wilkie, A. | URBAN AND REGIONAL PLANNING<br>Socio-economic impact assessment of off shore energy developments; social change; examination of Flotta project in Scotland; review of Venture Sccio-economic impact assessment; Socio-economic impacts of Coal Sun Fuel Project. |
| Wilkinson, B. | URBAN AND REGIONAL PLANNING<br>Correlations between social and economic change and application of pertinent indicators (Master's research). |

## PROGRAM ACTIVITIES:

A. *Department of Urban and Regional Planning*

The activities of the department are centred on a professionally-oriented approach to planning. Of particular interest are activities on offshore development.

B. EIA/SIA Core Program or Streaming?:

No, however, as in other institutions, students may choose this area as an area of specialized study, with the guidance of faculty.

C. Activities Related to EIA/SIA:

1) Mobil Oil Ltd. Scholarship of $5,000 to a graduate student studying impact assessment pertaining to energy projects.

2) Hosted Second International Conference on Oil and the Environment.

3) Public lectures and workshops on subjects about EIA/SIA.

## ACTIVITÉS:

A. *Department of Urban and Regional Planning*

Les activités du département sont axées sur un aspect de la planification qui débouche sur une profession. On s'intéresse particulièrement à l'exploitation des ressources sous-marines.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?

Ni l'un ni l'autre. Cependant, comme c'est le cas pour d'autres institutions, les étudiants peuvent choisir ce domaine et s'y spécialiser avec l'aide des professeurs.

C. Activités se rapportant à l'EIES:

1) Bourse de $5 000 accordée par Mobil Oil Ltd. à un étudiant diplômé pour étudier l'évaluation des incidences se rapportant aux projets énergétiques.

2) C'est à cette université que s'est tenue la deuxième conférence internationale sur le pétrole et l'environnement.

3) Conférences publiques et ateliers sur des sujets se rapportant à l'EIES.

# UNIVERSITY OF TORONTO

Location/Endroit: Toronto, Ontario

Mailing Address/ Adresse: The University of Toronto
Toronto, Ontario
M5S 1A1

**TEACHING:**

*Innis College*

INI 220 (2) ENVIRONMENTAL RISK ASSESSMENT

Instructor: A. Whyte.

INI 320 Y (3) CANADIAN ENVIRONMENTAL ISSUES

An intensive examination of selected current Canadian environmental issues and the ways in which government, business, universities and citizen groups respond to them by policy and action. Instructor: B. Savan, B. Gibson.

INI 4204 (4) ENVIRONMENTAL RESEARCH SEMINAR

This course is designed for advanced undergraduate study on selected environmental issues of current relevance. Students are encouraged to work as a team although individual projects are also acceptable. This course emphasizes the development of skills necessary to gather, interpret and present information on environmental issues. Instructor: B. Savan.

*Institute for Environmental Studies*

ESE 1002 F (G) ENVIRONMENTAL LAW

An introduction to environmental law for students engaged in environmental studies: the legal methods available to resolve environmental problems and the scope and limits of those methods, common law and statutory "tools" as well as environmental assessment legislation, the problem of "standing to sue" and the limits of litigation.

ESE 1005 F (G) ENVIRONMENTAL MANAGEMENT I

The focus is on choices in environmental management and on the basis for examining policy choices. Instructor: A. Grima, P. Byer.

ESE 1006 MAN-ENVIRONMENT THEORY II

An interactive model-building workshop, based on the adaptive environmental assessment and management approach.

ESE 1007 MAN-ENVIRONMENT THEORY I

Examines the ecosystem as a paradigm for public intervention rehabilitation. Instructor: H.A. Regier, A. Whyte.

ESE 1007 S (G) MAN-ENVIRONMENT THEORY II

This course defines some of the major models of man-environment relationships that have been incorporated within the theoretical frameworks of the social sciences including sociology, geography, anthropology, and psychology. The second part of the course analyzes key environmental management issues in Canada today, particularly determining what are the underlying assumptions and relating the differing perceptions with the conflicts that arise. Instructor: A. Whyte.

ESE 1008 F (G) ENVIRONMENTAL MANAGEMENT II

A further exploration into the methods of environmental management examined on the basis of case studies and seminars, especially the role of technology in ecosystem rehabilitation, environmental monitoring, environmental quality standards, decision making and policy evaluation. Instructor: A. Grima, P. Stokes and staff.

ESE 1210 (G) ENVIRONMENTAL RISK ANALYSIS I & II

Instructor: J. Dooley, I. Burton.

*Department of Geography*

GGR 332 H (3) ENVIRONMENTAL RISKS AND HAZARDS OF DEVELOPMENT

Studies of the exacerbation of natural and man-made environmental hazards in developing countries. An exploration of the methods of risk

assessment and hazard management in an international context.

GGR 356 H (3) ENERGY-ENVIRONMENT INTERACTION

Case studies of specific environmental impacts due to energy generation, transmission and consumption. Environmental aspects of nuclear, fossil-fuel, and hydroelectric generating systems, including the carbon dioxide effect. Energy requirements of specific resource-development activities. Energy conservation and economic growth.

GGR 1400 S (G) GEOGRAPHIC PERSPECTIVES ON ENVIRONMENTAL MANAGEMENT

Instructor: Staff.

GGR 1411 S (G) HUMAN RESPONSES TO NATURAL AND MAN-MADE ENVIRONMENTAL HAZARDS

Instructor: I. Burton.

GGR 1412 S (G) CONSERVATION STRATEGIES IN ENVIRONMENTAL AND RESOURCES MANAGEMENT

Instructor: A. Grima.

GGR 2334 (2) ENERGY, NATURAL RESOURCE AND ENVIRON MENTAL MANAGEMENT

The impact of human activity on environmental quality and resource depletion; evaluation of costs and benefits in management choices. The course is theory-oriented, but examines public policy on a wide range of global, national, and local environmental/resources issues.

GGR 416 H (4) FIELD STUDIES IN
GGR 1413 H (G) ENVIRONMENTAL ASSESSMENT
GGR 1602 H (G)

The writing of an environmental impact statement using currently methodologies of impact assessment. The reports will be presented and defended at mock public environmental hearings. Instructor: J. Whitney, V. Maclaren.

GGR 4165 (4) FILED STUDIES IN
GGR 1419 H (G) ENVIRONMENTAL ASSESSMENT
GGR 1603 S (G)

The major emphasis of the course is on carrying out an environmental impact assessment. This assessment will be written, and defended in a mock hearing to be held in class.

The first component of the practical work will involve preparation of appropriate biophysical, economic, and social baseline data. The second component will centre around the prediction and evaluation of the impact of the proposal being studied. The practical work will be supplemented by a small number of workshops and lectures. Instructor: J. Whitney, V. Maclaren.

*Master's Programme in Planning*

PLA 1005H (G) DECISION ANALYSIS

PLA 1551 H (G) POLICY ANALYSIS AND IMPACT ASSESSMENT

This course introduces quantitative criteria from engineering and economics as tools in policy analysis. These include financial analyses, decision theory, cost-benefit, input-output, mathematical programming, etc., taught in such a way as to be applicable to planning problems. Instructor: J. Miron, A. Lea, M. Gerther.

PLA 1601 H (G) INTRODUCTION TO ENVIRONMENTAL PLANNING

This course introduces three approaches to environmental planning, corresponding to the different scales of impact of a large resource and/or development project, for example, an oil sands project.

**RESEARCH:**

Burton, I. GEOGRAPHY

Assessment of technological risks and environmental hazards.

Byer, P. INSTITUTE FOR ENVIRONMENTAL STUDIES

Risk assessment and public decisions; hazardous waste facility siting.

Gibson, R.B. INNIS COLLEGE

Preparation of submissions to the Newfoundland and Labrador Assessment Panel on the Kitts-Michelin Uranium Mining Project for the Labrador Inuit Association (1979); review of socio-economic implications of Cominco's Polaris Project for the Canadian Arctic Resources Committee; preparation of submission to Ontario Royal

Commission on the Northern Environment, covering public participation in the application of the Ontario Environmental Assessment Act north of 50°, for the Wildlands League (Ontario chapter of the National and Provincial Parks Association of Canada).

Grima, A.P. — INSTITUTE FOR ENVIRONMENTAL STUDIES

Role of public participation in Great Lakes management; role of institutional mechanisms in mitigating environmental impacts; role of public participation in EIA/SIA.

Jones, P.H. — INSTITUTE FOR ENVIRONMENTAL STUDIES

UNDP/WHO Project on Environmental Impact System, 1979-1981; EIA and corrective measures; WNDP/WHO Greece Project on physical planning in the environment including oil exploration, extraction, and transportation in the offshore areas of Greece and Crete, 1974-1982; project impact management.

Kalin, M. — INSTITUTE FOR ENVIRONMENTAL STUDIES

Research on abandoned and inactive uranium mill tailings in Canada.

Mackay, D. — CHEMICAL ENGINEERING

Research on environmental behavior and effects of organic pollutants, especially hydrocarbons; technical advisor on oil spills in cold climates to Beaufort Sea Environmental Assessment Panel; impact of the removal of dams in Ontario's Thames River, 1980.

Munn, R.E. — INSTITUTE FOR ENVIRONMENTAL STUDIES

Teaching of EIA; Chairman, Project Advisory Committee on the Dalhousie University Project on the Ecological Input to EIAs, 1980-.

Regier, H.A. — INSTITUTE FOR ENVIRONMENTAL STUDIES

Just completed 20 year study on the impact of the Bruce Nuclear Complex on a local fish population; consultant for the fisheries part of the assessment of the dredging of the Keating Channel in Toronto, 1981; consultant for the fisheries part of assessment of the impact of the removal of dams in Ontario's Thames River, 1980.

Savan, B. — INNIS COLLEGE

Development of simulation game on the environmental assessment process for the National Survival Institute; environmental assessment presubmission process.

Stokes, P.M. — INSTITUTE FOR ENVIRONMENTAL STUDIES

Impacts of the Cutler acid plant, Serpent River reserve, Ontario: an interdisciplinary study; environmental monitoring.

Wellman, B. — CENTRE FOR URBAN AND COMMUNITY STUDIES

Network analysis; social impact assessment; technology assessment; project evaluation.

Whitney, J. — GEOGRAPHY

Project "Ecoville"; environmental assessment procedures; EIA and foreign aid; EIA in developing countries; Chairman, Impact Assessment Panel, Joint Conference of Canadian and Chinese Geographers.

Whyte, A.V. — INSTITUTE FOR ENVIRONMENTAL STUDIES

Role of flood risk maps on local assessment of flood risk in Oshawa Area, perception of climatic risks in Canada, study into selected aspects of the emergency caused by the Mississauga Train Derailment (with I. Burton and P. Victor), for the Solicitor General of Ontario.

**PROGRAM ACTIVITIES:**

A. 1) *Institute for Environmental Studies*

The Institute is an interdisciplinary centre for research and study which offers association with a wide range of academics in the natural and social sciences. The primary goal of the Institute is to provide the facilities and academic climate for problem-oriented research for those who wish to maintain their discipline-based academic work. The Institute specializes in research on: the quality of the environment, environmental management, environmental impact assessment and risk assessment. Students of the Institute may work towards either a Master of Arts or a Master of Science.

2) *Master's Programme in Planning*

The Programme assists students in understanding the mandate, goals and instruments of planning agencies at all levels of the public sector, while providing the skills required for a professional career in one of several areas of planning specialization. Environmental assessment is approached from the direction of environmental planning.

3) *Department of Geography*

a) Environmental and Biophysical Systems — These branches of geography are concerned with description and analysis of the physical, chemical and biological processes that condition the environment, and with interactions between these processes and man (considered individually or socially). One option of study in this area is environmental assessment. Students concentrate on the measurement, analysis, conceptualization and understanding of biophysical, socio-economic and built systems so as to be able to attempt to predict how each will change in response to new impacts.

b) Environmental Management and Environmental Assessment — These components of geography are highly eclectic. Students concentrating in this area take both physical and human geography courses, attempting to build an understanding of not only the physical and human approaches themselves, but also the many interactions between them.

4) *Innis College Environmental Studies Programme*

Innis College provides a minor programme at the undergraduate level in environmental studies. One of the topics addressed in this programme is environmental assessment.

B. EIA/SIA Core Program or Streaming?:

Yes. At the undergraduate level, the core program is offered in the Department of Geography. At the graduate level, the core program is offered in the Institute for Environmental Studies and the Master's Programme in Planning.

C. Activities Related to EIA/SIA:

The Institute for Environmental Studies organizes workshops and seminars on topics related to EIA/SIA. Of note are:

a) A workshop on the Ontario Environmental Assessment Act and the private sector, June, 1979.

b) A workshop on risk management in Canada, 1981.

c) A major conference on risk assessment, October, 1982.

d) Project Ecoville: a world-wide study of the impact of urbanization on the environment.

**ACTIVITÉS:**

A. 1) *Institute for Environmental Studies*

L'institut est un centre interdisciplinaire de recherche et d'études qui offre une gamme considérable de cours généraux en sciences naturelles et sociales. Il a pour but principal de fournir aux personnes qui désirent continuer de travailler dans leur discipline les ressources et le climat d'études nécessaires à la recherche orientée vers les problèmes. Il se spécialise dans la recherche sur la qualité de l'environnement, la gestion de l'environnement, l'évaluation des incidences environnementales et l'évaluation des risques. Les étudiants peuvent y obtenir une maîtrise ès Arts ou en Sciences.

2) *Master's Programme in Planning*

le programme aide les étudiants à comprendre le mandat, les buts et les moyens d'action des organismes de planification à tous les niveaux du secteur public tout en leur permettant d'acquérir les aptitudes nécessaires pour exercer une profession dans l'un des domaines de spécialisation en planification. On y étudie l'évaluation des incidences environnementales du point de vue de la planification de l'environnement.

3) *Department of Geography*

a) Systèmes écologiques et biophysiques — Ces branches de la géographie traitent de la description et de l'analyse des processus physiques, chimiques et biologiques qui conditionnent l'environnement et des interactions de ces processus et de l'homme (du point de vue individuel ou social). Ce domaine d'étude comporte une option en évaluation environnementale. Les étudiants concentrent leurs efforts sur la mesure, l'analyse et la compréhension des systèmes biophysiques, socio-économiques et construits, afin d'essayer de prévoir de quelle façon chacun d'eux changera sous l'effet de nouveaux impacts.

b) Gestion de l'environnement et évaluation environnementale — Ces branches de la géographie sont très éclectiques. Les étudiants qui se spécialisent dans ce domaine suivent des cours de géographie physique et humaine pour essayer de comprendre non seulement les aspects physiques et humains mais aussi leursnombreuses interactions.

4) *Innis College Environmental Studies Programme*

Le Innis College offre aux étudiants non diplômés un programme d'études environnementales qui porte entre autres sur l'évaluation environnementale.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?

Pour les étudiants non diplômés, le programme est offert au département de géographie, et, pour les étudiants diplômés, à l'Institut d'études environnementales; il existe aussi, pour ces derniers, un programme de maîtrise en planification.

C. Activités se rapportant à l'EIES:

L'Institut d'études environnementales organise des ateliers et des séminaires sur des sujets se rapportant à l'EIES. À signaler:

a) Un atelier sur la loi ontarienne concernant l'évaluation de l'environnement et le secteur privé, tenu en juin 1979.

b) Un atelier sur le contrôle des risques au Canada, tenu en 1981.

c) Une importante conférence sur l'évaluation des risques, tenue en octobre 1982.

d) Project Écoville: Une étude à l'échelle mondiale de l'effet de l'urbanisation sur l'environnement.

# TRENT UNIVERSITY

Location/Endroit: Peterborough, Ontario

Mailing Address/ Adresse: Trent University
Peterborough, Ontario
K9J 7B8

**TEACHING:**

*Canadian Studies/Environmental and Resources Studies*

CS 320 (3) PUBLIC POLICY AND THE CANADIAN ENVIRONMENT

Current issues in Canadian public policy relating to resource management, conservation, population and pollution control, approached in the context of world environmental and resource problems. Instructor: R.C. Paehlke.

*Environmental and Resource Studies Program*

ERS-HIS240 (2) CANADIAN RESOURCE DEVELOPMENT

An analysis of the evolution of the resource industries in Canada and their economic, political, social and environmental impacts. After historic introduction, the course will concentrate on energy resources since 1945 and the interaction between corporate initiatives, public policy, and government regulations. Instructor: R. Page.

ERS 300-301 (3) RESEARCH TOPICS

A research course in which small groups of students follows a specific project with a faculty member. Emphasis is on projects that involve some interaction between natural- and social sciences such as environmental impact assessment. Instructor: Staff.

ERS 333b WILDERNESS RESOURCES

An examination of the history, use planning and management of wilderness resources, with an emphasis on Canada, including environmental impact assessment procedures in national and provincial parks and wilderness areas.

ERS 340 (3) NORTHERN DEVELOPMENT

A case study of the environmental impacts of northern megaprojects.

ERS 410 (4) NORTHERN RESOURCE DEVELOPMENT AND THE ENVIRONMENT

An interdisciplinary study of the biological, geotechnical, social, economic and political aspects of northern mining, oil exploration, pipelines, LNG tankers, etc. and their relationship to the environment. Instructor: R. Page.

ERS 430 (4) ENVIRONMENTAL ETHICS:

The ethical issues arising from the interaction of man and environment in man's day-to-day existence and in the creation of official or public policies. Instructor: L. Rubinoff.

**RESEARCH:**

Bowles, R.T. SOCIOLOGY

Social impact assessment in small communities; community level SIA; impact of major developments on families and households.

Lockhart, A. SOCIOLOGY

Socio-economic impact model for northern development.

Marsh, J.S. GEOGRAPHY

Environmental impact assessment; Editor — *Park News;* EIA studies for Parks Canada; history, planning and management of parks and wilderness resources; impacts of technology; impacts of tourism.

Muller, E. ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM

Nature conservation; endangered species; environmental change; environmental impact assessment.

Paehlke, R. ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM

Conserver Society; politics of resource development; EIA and energy planning; teaching of environmental studies; technology assessment.

Page, R. ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM

Public participation; environmental assessment of energy development;

| | |
|---|---|
| | northern development and assessment; energy policy; text on environmental and resource development in the 1970's. |
| Torgerson, D. | ADMINISTRATIVE AND POLICY STUDIES<br>Social impact assessment; editor — *Alternatives*. |

**PROGRAM ACTIVITIES:**

A. 1) *Environmental Studies Program*

Interdisciplinary undergraduate program. Includes formal instruction in EIA. Offers a pass and honours B.A. or B.Sc. degree (depending whether the emphasis is on Biological or Geographic subjects).

2) *Center for Canadian Heritage and Development Studies*

Research support and M.A. program promoting interdisciplinary approaches to Canadian study topics. A major emphasis within the Centre is an interdisciplinary group which combines SIA and EIA as part of a broader analytic approach to northern and rural developmental and policy problems.

3) *Canadian Studies Program*

The Canadian Studies Program is not founded in a single department, but it is a co-operative program offered among twelve departments, at the undergraduate level. EIA is approached from a problem or issue-oriented direction.

4) *Northern Studies Committee*

The Committee of faculty members with interest in northern research, acts as a body to co-ordinate research activities, grant applications, teaching activities, and other matters pertaining to northern studies.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

1) Publication of *Alternatives*, a "popular" academic journal on environmental subjects.

2) Seminars and workshops for the public on environmentally related matters.

3) OPIRG — (Ontario Public Interest Research Group) A public action group active in promoting environmental education in the general public.

**ACTIVITÉS:**

A. 1) *Environmental Studies Program*

Il s'agit d'un programme interdisciplinaire pour les étudiants non diplômés qui comprend une formation régulière en EIE et permet d'accéder au baccalauréat en arts ou en sciences selon que l'accent a été mis sur la biologie ou la géographie.

2) *Centre for Canadian Heritage and Development Studies*

Soutien de la recherche et programme de maîtrise ès arts favorisant l'étude interdisciplinaire des questions canadiennes. L'une des activités importantes du Centre est le travail d'un groupe interdisciplinaire qui intègre l'EIES à une approche analytique générale de la mise en valeur du Nord et des régions rurales ainsi que de la problématique des politiques.

3) *Canadian Studies Program*

Programme conjoint réparti entre 12 départements mais dont aucun d'entre eux n'a l'unique responsabilité. Il est offert aux étudiants non diplômés et l'EIE y est étudiée en rapport avec des problèmes ou des questions.

4) *Northern Studies Committee*

Formé de professeurs qui s'intéressent aux recherches nordiques, le comité coordonne les activités de recherche, les demandes de bourses, les activités d'enseignement et les autres questions qui se rapportent aux études nordiques.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

1) Publication de «*Alternatives*», une revue d'éducation populaire sur l'environnement.

2) Séminaires et ateliers, à l'intention du public, sur des sujets se rapportant à l'environnement.

3) OPIRG — (Ontario Public Interest Research Group) — C'est un groupe d'action qui s'occupe de promouvoir l'éducation du grand public en matière d'environnement.

# UNIVERSITY OF VICTORIA

Location/Endroit: Victoria, British Columbia

Mailing Address/ Adresse: The University of Victoria
P.O.Box 1700
Victoria, British Columbia
V8W 2Y2

**TEACHING:**

*Department of Biology*

BIO 534/ BIO 314 (G) (3) ENVIRONMENTAL IMPACT ASSESSMENT MARINE FIELD BIOLOGY

EIA is a component of the course. Instructor: D. Ellis.

GEO 556 An introduction to the objectives, philosophy, concepts, methods and social implications of environmental impact assessment. Instructor: D. Sewell, D. Ellis.

*Environmental Studies Program*

ES 400 (4) THE POLICY PROCESS: ENVIRONMENT AND ENERGY

An examination of government decision-making as it relates to the environment. Instructor: D. Anderson.

*Department of Geography*

GEO 346 (3) COMMUNITY DEVELOPMENT AND PLANNING IN CANADA

The focus is on the manner in which spatial and technological developments have influenced the social and environmental balance of present communities. Instructor: J. Ransome.

GEO 350A (3) GEOGRAPHY OF RESOURCE MANAGEMENT

An introduction to the geographic study of natural resources; their form, inherent characteristics and external relations with the geography of the area in which they are found. Instructor: W. Ross, C. Wood.

GEO 350B (3) APPLIED RESOURCE GEOGRAPHY

Instructor: W. Ross.

GEO 450A (4) DECISION-MAKING IN RESOURCES MANAGEMENT: THEORY

Instructor: W.R.D. Sewell.

GEO 450B (4) DECISION-MAKING IN RESOURCES MANAGEMENT: PRACTICAL APPLICATIONS

Instructor: W.R.D. Sewell.

**RESEARCH:**

Bell, M. ENVIRONMENTAL STUDIES PROGRAM

Vegetation, wildlife and mining; vegatation inventory, mapping, interpretation, sensitivity analysis in conjunction with surface mine development.

Ellis, D.V. BIOLOGY

Research on marine environmental impact and recovery; assessment procedures.

Sewell, W.R.D. GEOGRAPHY

Water resources analysis; resources decision-making; assessment of Canadian policies in offshore development; new book on environmental impact assessment and government decision-making.

**PROGRAM ACTIVITIES:**

A. 1) *Department of Geography*

Environmental impact assessment is approached from the focus of resource management, and in particular, through issues concerned with water resources. Activity occurs both at the graduate and undergraduate level.

2) *Department of Biology*

The department approaches the study of topics related to EIA/SIA primarily from marine environmental impact. A joint graduate course on EIA is offered between the department and the Department of Geography.

3) *Environmental Studies Program*

The program is comprised of two approaches to environmental studies. The first, the conceptual

approach, introduces students to a range of environmentally-related disciplines. The second approach is a topical approach, which focuses a selection of courses on a particular problem area. The program also includes an active examination of issues related to both EIA and SIA.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

In the Environmental Studies Program, students are exposed to "real-world" situations through a series of guest lectures and workshops on various subjects.

**ACTIVITÉS:**

A. 1) *Department of Geography*

On y étudie l'évaluation des incidences environnementales du point de vue de la gestion des ressources et, en particulier, des ressources en eau. On retrouve dans ce domaine des étudiants non diplômés et diplômés.

2) *Department of Biology*

On y étudie l'EIES surtout du point de vue de l'environnement marin. Le département offre conjointement avec un autre département un cours en EIE aux étudients diplômés.

3) *Environmental Studies Program*

On y enseigne deux façons d'aborder l'étude de l'environnement: l'approche notionnelle, qui initie les étudiants à une variété de disciplines se rapportant à l'environnement, et l'approche par sujets, qui consiste en un choix de cours dans un domaine donné où se présentent des problèmes.

Le programme comprend aussi une étude sérieuse des questions qui se rapportent à l'EIES.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

Dans le programme d'étude environnementales, les étudiants en apprennent sur des situations réelles grâce à des conférenciers invités et à des ateliers sur divers sujets.

# UNIVERSITY OF WATERLOO


Location/Endroit: Waterloo, Ontario

Mailing Address/ Adresse: The University of Waterloo
Waterloo, Ontario
N2L 3G1


**TEACHING:**

*School of Urban and Regional Planning*

PLAN 430 (4) SOCIAL POLICY PLANNING

A reasoned systems approach to understand change and develop strategies for change through an integration of social goals, policy and programs.

PLAN 623 (G) SOCIAL CONCEPTS IN REGIONAL PLANNING

Examination of planners in their environment using systems, organization, changes and theories. Social concepts will be examined within a framework of social structure, looking at case studies and coming to some practical conclusions on how planners can and should use social concepts to enhance their efforts and accomplishments.

PLAN 626 (G) PLANNING, CITIZEN INVOLVEMENT AND SOCIAL CHANGE

Centred on the theory and practice of citizen involvement and social change in relation to planning and policy formula tion, it includes the ideology of involvement, social change and intervention strategies, economics and social development, and new models of change based on degrees of centralization. There is an emphasis on Canadian case materials.

PLAN 662 (G) NATURAL RESOURCES PLANNING: POLICIES AND PROGRAMS (also Geography 662)

Natural resources and the planning process. Social, economic, political and legislative settings for natural resource planning: major areas of public controversy and conflict in natural resource use and development; international relations and the formulation of criteria for future resource planning policies. Instructor: J.G. Nelson.

PLAN 668 (G) ENVIRONMENTAL IMPACT ASSESSMENT

Techniques and technicalities covered in the first part of the course include legal aspects, teamwork, data collection and manipulation, public participation, and cost-benefit analysis. These topics are followed by case histories considered from the perspective of the proponent, public, consultant and government. Finally, the ethics and politics of environmental impact assessment are reviewed. Students are required to participate in a simulated environmental impact assessment.

*Department of Man-Environment Studies*

MAN ENV150 (1) TROPICAL ISLANDS WORKSHOP

Assessing social and environmental effects in these areas. Courses focus on macro-analyses and micro-analyses working on a three-tier model, i.e. social arrangements, technology and resources. Instructor: C. De'Ath.

MAN ENV150 (1) WORKSHOP ON FIELD ECOLOGY

Includes a brief introduction to EIA strategy and technique followed by an actual field investigation. Instructor: L. Lamb.

MAN ENV337 (3) ENVIRONMENTAL MANAGEMENT

The course covers the theory and principles of EIA, surveys various methodologies, discusses the place of EIA in environmental planning in the Ontario Government, reviews case studies, looks at some of the larger issues surrounding EIA, and provides the student with an opportunity to do an actual EIA and take part in a mock hearing. Instructor: G. Michalenko.

MAN ENV338 (3) SOCIAL IMPACT ASSESSMENT

This course will provide an introduction to the background, theory and methodology of SIA. We will examine SIA as a type of social science research and as a key element in the continuing push for more informed and responsible decision-making in all sectors of society.

*Department of Geography*

GEOG 356 (3) RESOURCE MANAGEMENT

Reviews selected theories, methods, and terminology related to economic, behavioral, institutional, and decision-making aspects of resources and environmental problems. Instructor: B. Mitchell.

**RESEARCH:**

De'Ath, C.E. MAN-ENVIRONMENT STUDIES

Socio-economic impact study in the Philippines, and Papua New Guinea.

Dorney, R.S. SCHOOL OF URBAN AND REGIONAL PLANNING

Consulting to National Energy Board, Ontario Energy Board, Ontario Municipal Board, Environmental Assessment Board; environmental supervision of pipeline construction; urban ecosystems; ecological dimensions of environmental assessment; Ontario Society for Environmental Management seminars.

Francis, G. MAN-ENVIRONMENT STUDIES

Institutional arrangements for environmental management.

Hoffman, D. SCHOOL OF URBAN AND REGIONAL PLANNING

Indentification and mapping of environmentally sensitive areas in Lambton and Perth counties, Ontario; ecological basis for EIA; agricultural development in urban regions.

Keith, R. MAN-ENVIRONMENT STUDIES

Ecological and socio-economic impacts of northern petroleum and mineral development; regional planning in the north.

Lamb, L. ENVIRONMENTAL STUDIES

Strategies for the protection and management of rare species, relict and representative habitats and landforms; Ecological Advisory Council.

Lerner, S. MAN-ENVIRONMENT STUDIES

Social impact assessment; designed and developed SIA workshop course at University of Waterloo; social impacts of leisure.

McLellan, A. GEOGRAPHY

Preparation of EISes related to pit and quarry operations; land rehabilitation.

Michalenko, G. MAN-ENVIRONMENT STUDIES

Social assessment; effect of resource development on native communities.

Mitchell, B. GEOGRAPHY

Social and economic impacts, watershed management.

Nelson, J.G. FACULTY OF ENVIRONMENTAL STUDIES

Environmental and socio-economic impact assessment; northern oil and gas development and its assessment; assessment of pipeline corridors; environmentally significant areas.

Priddle, G. MAN-ENVIRONMENT STUDIES

Socio-economic and ecological impacts, particularly for parks, protected areas, coastal zones.

Suffling, R. SCHOOL OF URBAN AND REGIONAL PLANNING

Effect of resource development on traditional native activities.

Wall, G. GEOGRAPHY

Impacts of recreation and tourism.

**PROGRAM ACTIVITIES:**

A. *Faculty of Environmental Studies*

The Faculty includes the School of Architecture, the Department of Geography, the Department of Man-Environment Studies, and the School of Urban and Regional Planning. Certain Faculty members work throughout the Faculty. The Faculty concentrates on using diverse sources of knowledge from its different component disciplines to understand one particular problem area: man and his environment. Although each department has a particular academic focus, environmental and social assessment are areas of study in which all have common interests.

B. EIA/SIA Core Program or Streaming?:

Yes. With such an integrated approach to man-environment studies, the facilities and guidance are available to those students wishing to pursue a program of study and research in EIA/SIA.

C. Activities Related to EIA/SIA:

Involvement in seminars, workshops and conferences related to EIA/SIA. Of note are:

a) Involvement in the Geographical Inter-University Resource Management Seminars (GIRMS).

b) Ontario Society for Environmental Management workshops held on campus.

## ACTIVITÉS:

A. *Faculty of Environmental Studies*

La faculté comprend l'école d'architecture (School of Architecture), le département de géographie (Department of Geography), le département d'études de l'homme et de l'environnement (Department of Man-Environment Studies) ainsi que l'école de planification urbaine et régionale (School of Urban and Regional Planning). Certains professeurs sont aussi appelés à enseigner dans toute la faculté. Cette dernière s'applique à utiliser les diverses sources de connaissances des différentes disciplines pour comprendre un problème en particulier: l'homme et son environnement. Bien que, dans chaque département, l'enseignement soit axé sur une discipline particulière, l'évaluation des incidences environnementales et sociales est un sujet d'étude qui intéresse toute la faculté.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?

Étant donné cette façon aussi intégrée d'aborder l'étude de l'homme et de l'environnement, les étudiants qui désirent suivre un programme d'études et de recherches en EIES ont à leur disposition les ressources et l'aide nécessaires.

C. Activités se rapportant à l'EIES:

Séminaires, ateliers et conférences se rapportant à l'EIES. À signaler:

a) Participation aux séminaires géographiques inter-universités sur la gestion des ressources (GIRMS).

b) Les ateliers de l'*Ontario Society for Environmental Management* ont lieu à l'université.

# UNIVERSITY OF WESTERN ONTARIO

Location/Endroit: London, Ontario

Mailing Address/ Adresse: The University of Western Ontario
London, Ontario
N6A 3K7

## UNIVERSITY OF WESTERN ONTARIO

*Faculty of Law*

ES 444 (4) ENVIRONMENTAL LAW

Instructor: J.W. Samuels.

ES 565 (6) ENVIRONMENTAL AND OCCUPATIONAL HEALTH LAW

Examines, among other topics, environmental impact assessment. In particular, the course deals with the Ontario Environmental Assessment Act. Instructor: J.W. Samuels.

## RESEARCH:

Huron Erie Land Use Study (HELUS)

The objectives of this group include environmental impact assessment and several members have consulted on behalf of the group or have arranged seminars on various aspects; environmental assessment of the 500kv power transmission corridor from Bruce Point to London, Ontario on behalf of Ontario Hydro; Highway 401 environmental assessment (for Government of Ontario); transformer station environmental assessment (for Ontario Hydro).

Flynn, J.D. KING'S COLLEGE

Community impact assessment; preparing a summary report of SIA literature for the Regional development sector of IIASA; United Church of Canada committee to monitor exemptions given under EIA legislation; energy policy.

## PROGRAM ACTIVITIES:

A. None indicated.

B. EIS/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

Faculty Seminars, King's College. Of note:

a) "The construction of multilane highways in Ontario," presenter — J. Flynn, 1981.

b) "Regional economic growth or regional underdevelopment: the construction of nuclear generating stations," presenter- J. Flynn, 1983.

## ACTIVITÉS:

A. Aucune.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

Séminaires de la faculté, au King's College. A signaler:

a) «The construction of multilane highways in Ontario», par J. Flynn (1981).

b) «Regional economic growth or regional underdevelopment: the construction of nuclear generating stations», par J. Flynn (1983).

# WILFRID LAURIER UNIVERSITY

Location/Endroit: Waterloo, Ontario

Mailing Address: Wilfrid Laurier University
Adresse: Waterloo, Ontario
N2L 3C5

## TEACHING:

*Department of Geography*

241/291-3 (2) GEOGRAPHY OF RESOURCE POLICY AND ADMINISTRATION

Focus upon the concepts and role of policy, planning and administration in Canadian resource management (includes EIA and SIA for specific policy fields). Instructor: G. Smith.

242/292-3 (2) RESOURCE MANAGEMENT IN THE GREAT LAKES BASIN

An analysis of current environmental issues and problems focusing on the Great Lakes Basin. Instructor: J. McMurry.

290-33 (2) PRINCIPLES OF RESOURCES MANAGEMENT

Specific concepts, methods and techniques of resource management practice in forestry, fisheries, water, air and land resources (includes EIA and SIA in some depth). Instructor: J. Hall.

342/392-3 (3) GEOGRAPHY OF WATER RESOURCES

Concepts and techniques of water basin management including benefit/cost analysis, public participation and social impact assessment. Instructor: G. Smith.

493-3 (4) PROBLEMS IN LAND RESOURCES MANAGEMENT

Seminar discussing the social, economic, ecological and political dimensions of land-use conflicts and issues. Instructor: H. Parson.

651 (G) DECISION-MAKING, EVALUATION AND PUBLIC PARTICIPATION

Graduate seminar focusing on resource management decisions, public involvement and evaluation methodologies (including SIA and EIA). Instructor: G. Smith.

697 (G) HUMAN ECOLOGY OF STRESSED ENVIRONMENTS

Graduate research seminar focussing on natural resources, their development, the natural hazards and adverse environmental impacts associated with development. Instructor: K. Hewitt, G. Smith, J. Hall, J. McMurry.

## RESEARCH:

Block, D. GEOGRAPHY

Graduate research on the environmental impacts of nuclear power generation in Ontario.

Murphy, S. GEOGRAPHY

Research on FEARO and EARP for Senior Honours Essay.

Radke, T. GEOGRAPHY

Graduate research on institutional and policy aspects of acid rain.

Reynolds, M. GEOGRAPHY

Graduate research on evaluation methodologies in resource management.

Shrubsole, D. GEOGRAPHY

Graduate research on floodplain management in North Bay (including EIA and SIA considerations).

Smith, L.G. GEOGRAPHY

Institutional arrangements for electric power planning in Canada; public participation; an assessment of the Lancaster Sound Green Paper; institutional arrangements for the management of acid rain in Canada; northern land-use planning.

Tuck, L. GEOGRAPHY

Senior honours essay research on the social impacts and participatory requirements involved with proposed national parks: case study of the proposed Bruce Peninsula National Park.

**PROGRAM ACTIVITIES:**

A. *Department of Geography*

The Department of Geography at Wilfrid Laurier provides the most focussed examination of issues concerning EIA and SIA. In addition, a course dealing specifically with Impact Assessment, "Impact Assessment in Resource Management" is soon to be offered (possibly 1983-84).

B. EIA/SIA Core Program or Streaming?:

EIA and SIA are at present, strong components of WLU's focus on resource management, but they do not, as yet, represent a specific program or option of study in the Department of Geography.

C. Activities Related to EIA/SIA:

The Department of Geography actively participates in the organization and dissemination of information from the Geographical Inter University Resource Management Seminars, held jointly with the Universities of Guelph and Waterloo. Many topics examined during the GIRMS meetings relate directly to EIA.

**ACTIVITÉS:**

A. *Department of Geography*

C'est au département de géographie de l'université Wilfrid Laurier que l'étude des questions se rapportant à l'EIES est la plus au point. En outre, les professeurs du département ont mentionné qu'on offrira bientôt un cours (peut-être en 1983-1984) portant spécialement sur l'évaluation des incidences et qui aura pour titre «*Impact Assessment in Resource Management*».

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?

Actuellement, l'EIES compte pour beaucoup dans l'intérêt que porte l'université Wilfrid Laurier à la gestion des ressources, mais elle ne fait pas encore l'objet d'un programme ou d'une option d'études au département de géographie.

C. Activités se rapportant à l'EIES:

Le département de géographie participe activement aux séminaires géographiques inter-universités sur la gestion des ressources, qui sont tenus conjointement avec l'université de Guelph, et à la diffusion de l'information qui y est présentée. Un grand nombre de sujets étudiés lors de ces séminaires se rapportent directement à l'EIE.

# UNIVERSITY OF WINDSOR

Location/Endroit: Windsor, Ontario

Mailing Address/ Adresse: The University of Windsor
Windsor, Ontario
N9B 3P4

## TEACHING:

*Department of Geography*

42.200 (2) INTRODUCTION TO RESOURCE MANAGEMENT

Basic concepts pertaining to natural resources, the impact of their use on the ecosystem, and the problems in their management. Emphasis will be placed on the growing demand for resources, the functional interaction between human society and its physical environment, and the spatial patterns of resource use and ecological impact. Instructor: I. Stebelsky.

42.333 (3) ENVIRONMENTAL DEGRADATION AND ITS CONTROL IN RESOURCE MANAGEMENT

The use and misuse of energy resources, minerals, wilderness areas, wildlife, air, water, and land. The analysis of resource management strategies for a more harmonious man-environment relationship in the future. Instructor: P. Vandall.

42.360 (3) THE CANADIAN ARCTIC

An introduction to the geography and environment, history and present socio-economic conditions of Arctic Canada. The objective is to provide the necessary background for understanding current problems of indigenous peoples, resource development and exploitation and environmental management. Instructor: J. Jacobs.

42.459 (4) ENVIRONMENTAL ASSESSMENT OF AIR AND WATER RESOURCES

The analysis of man's effect on the atmosphere and hydrosphere. Instructor: M. Sanderson.

## RESEARCH:

Blackbourn, A. GEOGRAPHY

Industrial development and social impact.

Blenman, M. GEOGRAPHY

Urbanization, transportation and social impact.

Innes, F. GEOGRAPHY

Plantation agriculture, environmental and social impact.

Jacobs, J. GEOGRAPHY

Climatic modification and assessment of man's impact on the environment.

Romsa, G. GEOGRAPHY

Measurement of social impact from environmental degradation; measurement of environmental impact in the city.

Stabelsky, I. GEOGRAPHY

Assessment of the impact of land tenure, social organization, and farming techniques on the physical environment, especially soils; impact of environmental deterioration on society.

Sanderson, M. GEOGRAPHY

Analysis of man's effects on the atmosphere and hydrosphere.

Trenhaile, A. GEOGRAPHY

Assessment of human impact on shoreline erosion.

Vandall, P. GEOGRAPHY

Analysis of resource management strategies for harmonious man-environment relationship.

## PROGRAM ACTIVITIES:

A. *Department of Geography*

The major program area at the University of Windsor, as indicated, is in the Department of Geography. In particular, the department offers an honours program in resource mdnagement. The option is also available for students to undertake co-operative work/study programs in honours geography.

B. EIA/SIA Core Program or Streaming?: None indicated.

C. Activities Related to EIA/SIA:

The Department of Geography regularly sponsors guest speakers for seminars or public lectures. Recently, speakers have talked about rural development, and the environmental and social impact of technological change. The department also operates an Arctic School for students interested in studying topics related to the northern environmment.

## ACTIVITÉS:

A. *Department of Geography*

C'est dans ce département, à l'université de Windsor, que l'on trouve le programe le plus important. On offre entre autres une concentration en gestion des ressources. Les étudiants peuvent aussi entreprendre des programmes conjoints de travaux et d'études avec spécialisation en géographie.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?: Ni l'un ni l'autre.

C. Activités se rapportant à l'EIES:

Le département de géographie invite régulièrement des conférenciers pour les séminaires et les conférences publiques. Récemment, les sujets traités ont été le développement rural et les incidences environnementales et sociales des changements technologiques. Le département dirige aussi l'école de l'arctique (Arctic School) pour les étudiants intéressés à étudier des sujets qui se rapportent à l'environnement nordique.

# YORK UNIVERSITY

Location/Endroit: Downsview, Ontario

Mailing Address/ Adresse: York University
4700 Keele St.
Downsview, Ontario
M3J 1P3

**TEACHING:**

*Department of Sociology*

(G) SOCIOLOGY OF NORTHERN DEVELOPMENT

An analysis of the impact of resource development projects on northern hinterland communities. Analysis based upon a theoretical model of socio-economic impact, and an accompanying methodology derived from the literature, and a completed socio-economic impact study of six northern communities. Instructor: B. Blishen.

*Faculty of Environmental Studies*

ES 605 (G) ENVIRONMENTAL IMPACT ASSESSMENT

This seminar examines the theory and practice of environmental impact assessment. Both Canadian and American approaches to EIA are addressed with emphasis given to Ontario's legal and administrative requirements. The bulk of the course work focusses on the concepts, principles and methods of impact assessment and review. The course includes practical group exercises. Instructor: A. Armour.

ES 606 (G) SOCIAL IMPACT ASSESSMENT

Introductory examination of Canadian and American legislative/administrative contexts of social impact assessment, its role in environmental impact assessment, basic procedures (profiling, projecting, assessing and evaluating), citizen participation, and the adequacy of and alternatives to social impact assessment. Instructor: A. Armour.

ES 690.9 (G) IMPACT ASSESSMENT WORKSHOP

This course focuses on the application of methods and techniques for environmental assessment including social impact assessment. Instructor: A. Armour.

*Osgoode Hall Law School*

(3) ENVIRONMENTAL PROTECTION LAW

Examines among other topics EIA. Instructor: D.P. Emond.

(3) RESOURCES DEVELOPMENT LAW

A portion of the course examines the federal environmental assessment and review process (EARP). Instructor: D.P. Emond, P.C. Cumming, I. McDougal.

(3) ENERGY LAW

Instructor: I. McDougall, P.C. Cumming.

**RESEARCH:**

Armour, A. FACULTY OF ENVIRONMENTAL STUDIES

Energy conservation through land use planning; community energy profiling; social/environmental impact assessment; environmental planning.

Allin, J. OSGOODE HALL LAW SCHOOL

Public participation under the Ontario Environmental Assessment Act and New Zealand Legislation (LLM research).

Blishen, B. SOCIOLOGY

Socio-economic impact modelling; consultant to Department of Indian Affairs and Northern Development on socio-economic modelling; seminars on socio-economic impact modelling in Ottawa, Vancouver.

Craig, D. OSGOODE HALL LAW SCHOOL

Public participation and environmental and social impact assessment (LLM research).

Emond, P. OSGOODE HALL LAW SCHOOL

Revising text *Environmental Assessment Law in Canada;* land use plan-

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| | ning and environmental assessment; fairness and natural justice in environmental assessment hearings. |
| Homenuck, P. | FACULTY OF ENVIRONMENTAL STUDIES<br><br>Social planning; SIA; Canadian native issues; land-use planning; public participation. |
| Lang, R. | FACULTY OF ENVIRONMENTAL STUDIES<br><br>Environmental impact assessment; land-use planning; energy conservation through land-use planning; community energy profiling; environmental planning. |
| Stevenson, C. | OSGOODE HALL LAW SCHOOL<br><br>Problems of evidence proof and argument in environmental decision-making processes. |

**PROGRAM ACTIVITIES:**

A. 1) *Osgoode Hall Law School*

The teaching and research of subjects related to EIA/SIA undertaken by members of the Law School focusses on two main areas. The first area relates to resources development and those parts of the legal process that are concerned with this area. The second is the hearing process; in particular, an examination of whether or not the principles of fairness and natural justice are being adequately held in the various EIA processes.

2) *Faculty of Environmental Studies*

The faculty provides a program of teaching and research at the graduate level. Students and faculty members pursue various aspects of man-environment interaction in their research. Although there is no EIA/SIA program *per se*, students may pursue a research path in this area drawing from the various areas covered by faculty members.

a) *Joint Law-Environmental Studies Program* — This program allows students to marry interests in the study of law and environmental issues. Students examine the need to protect environmental conditions in the many areas of human activity, and the many controls available through jurisprudence.

b) *Administrative and Environmental Studies Program* The program integrates concerns and skills required for careers in management and administration in the private and public sectors with an emphasis on environmental matters. This area of study results from the fact that major organizations are being forced to deal with environmental concerns in their day to day operations.

3) *Department of Sociology*

The social impact of development projects is one of the areas under study by various members of the department. Of special interest is the analysis of the impact of resource development projects on northern hinterland communities. The department maintains close ties with the Faculty of Environmental Studies.

B. EIA/SIA Core Program or Streaming?:

Although there is no designated streaming, students in the Faculty of Environmental Studies pursue individual programs of study. To date, more than a dozen students have chosen EIA/SIA as the focus of their graduate work.

C. Activities Related to EIA/SIA:

The Faculty of Environmental Studies offers seminars and workshops on topics related to EIA/SIA for the general public and for those in the private and public sectors. Of note are:

a) "A Guide to Commenting on Environmental Impact Assessments," November, 1981;

b) "Social Impact Assessment and Monitoring," May, 1982;

c) "Defending your Environment," Fall, 1982; and

d) "Predicting and Assessing the Impact of Public Projects," Fall, 1982.

**ACTIVITÉS:**

A. 1) *Osgoode Hall Law School*

L'enseignement et la recherche en EIES portent sur deux principaux domaines: l'exploitation des ressources et son aspect juridique, et le processus actuel des audiences lui-même. On s'interroge en particulier sur l'application des principes d'équité et de justice naturelle dans les divers processus d'EIE.

2) *Faculty of Environmental Studies*

La faculté offre un programme d'enseignement et de recherche pour les étudiants diplômés. Au cours de leurs recherches, étudiants et professeurs étudient divers aspects de l'interaction de l'homme et de l'environnement. Bien qu'il n'existe pas de véritable programme d'études en EIES, les étudiants peuvent poursuivre des recherches sur le sujet en puisant dans les divers domaines d'enseignement des professeurs.

a) *Joint Law-Environmental Studies Program* — Offert aux étudiants intéressés par le droit et par les questions environnementales. On y étudie la nécessité de protéger l'environnement dans les nombreux domaines de l'activité humaine ainsi que les nombreux contrôles à cet effet auxquels il est possible de recourir par la jurisprudence.

b) *Administrative and Environmental Studies Program* — Le programme intègre les aptitudes à régler les problèmes et les connaissances nécessaires aux étudiants qui se destinent à une carrière en gestion et en administration dans le secteur privé et public; on y met l'accent sur les questions environnementales. Ce domaine d'études a été créé parce que les organisations importantes doivent régler des problèmes qui se rapportent à l'environnement au cours de leurs opérations journalières.

3) *Department of Sociology*

L'impact social des projets d'exploitation est l'un des sujets étudiés par divers membres du département. On s'intéresse particulièrement à l'analyse de l'impact des projets d'exploitation des ressources sur les collectivités nordiques de l'arrière-pays. Le département entretient des rapports étroits avec la faculté d'Études environnementales.

B. Y a-t-il un programme portant spécialement sur l'évaluation des incidences environnementales et sociales ou, à défaut, une orientation générale des étudiants en ce domaine?

Bien qu'il n'existe pas d'orientation en tant que telle, les étudiants de la faculté d'études environnementales suivent des programmes d'études individuels. Jusqu'à maintenant, plus d'une douzaine d'étudiants diplômés ont choisi l'EIES comme sujet de leurs travaux.

C. Activités se rapportant à l'EIES:

La Faculty of Environmental Studies présente, à l'intention du grand public et des personnes qui travaillent dans le secteur privé et public, des séminaires et des ateliers sur des sujets qui se rapportent à l'EIES. À signaler:

a) «A Guide to Commenting on Environmental Impact Assessments» (novembre 1981);

b) «Social Impact Assessment and Monitoring», (mai 1982);

c) «Defending your Environment» (automne 1982); et

d) «Predicting and Assessing the Impact of Public Projects» (automne 1982).

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To advance the state of the art in EIA and SIA it is necessary not only to improve the contact network between researchers, but also important to make known the written material that is available on the subject. The current bibliography provided in this section is an annually updated bibliography of reports, discussion papers, articles and books dealing with subjects relating directly to EIA and SIA. The bibliography is not meant to be a complete listing of every publication on the subject but rather it is meant to be an accurate listing of material which has been recently written and is available.

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## STUDENT PAPERS

During the survey, respondents were asked to submit any papers written by their students, or groups of their students, which they felt would be of sufficient quality to be interest to the readship of this publication. What follows then are papers written by students for the completion of course work, examining such things as case studies, EIA methodology and various other aspects of EIA and SIA.

## ÉCRITS D'ETUDIANTS

Lors de notre enquête, nous avons demandé à nos correspondants de presenter des ecrits eventuels faits par des étudiants et susceptibles d'interesser les lecteurs de notre publication. Suivent donc ici des ecrits de ce genre preparés pour la completion d'un cours et concernant l'examen d'etudes de cas, la methodologie pour les EIE, et divers autres aspects des evaluations d'impacts sociaux et environnementaux.

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